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THE

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A Weekly Medical Journal.

EDITED BY

GEORGE M. GOULD, M.D.

VOLUME LX.

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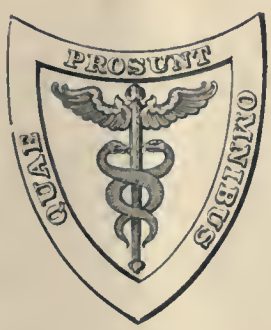

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ORIGINAL ARTICLES.

UNUNITED FRACTURES.[1]

BY OSCAR H. ALLIS, M.D.,

SURGEON TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

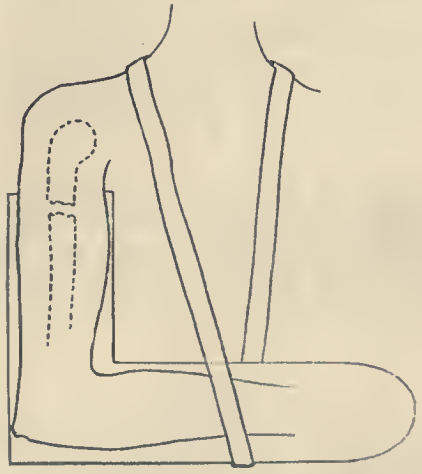
FOR knowledge concerning the frequency of non-union in fractures we turn naturally to hospital statistics, and are astonished to find no recorded cases. This would imply that hospital surgeons were loath to put on record their failures, or that hospital treatment was superior to that in private practice; but neither conclusion is correct. Hospital records recognize but three classes, viz., "cured," "relieved," and "died." Now, few cases of simple fracture require more than two months, and were a case to be dismissed at the end of three or even four months, it would neither be true as a matter of fact, nor just to the surgeon treating the case, to place it on record as a case of "non-union." I have made no attempt to collect cases, but can recall eighteen cases—eight of the humerus, five of the femur, two of both bones of the leg, two of both bones of the forearm, and one of the jaw. These cases were treated in the Pennsylvania, Presbyterian, St. Mary's, Jefferson, and Hahnemann Hospitals, and in private practice. I have no means of estimating the frequency of non-union, but feel that the estimate of Hamilton (1 : 500) is much too low.

The most extensive statistical tables with which I am acquainted (Agnew's) give much interesting material, from which I formulate the following: That fractures in long bones occur most frequently near the foot and wrist, while non-union occurs most frequently near the shoulder and pelvis. In other words, the further from the trunk, the more frequent the fracture; the nearer the trunk, the more frequent non-union. If syphilis, scurvy, old age, wasting disease, paralysis, fevers, etc., were the cause of non-union, then it would occur most frequently in the parts in which fracture was most frequent, but this is not the case. Fracture in the long bones occurs more commonly in the leg above the ankle, but non-union is more than twice as common in the humerus near the shoulder.

Surgeons at the present day believe that non-union is chiefly the result of faulty fixation, as a result of which the reparative process is disturbed. This disturbance is from uncontrolled or uncontrollable muscular action: the latter when the patient is suffering from delirium; the former when the patient is conscious, but, either through neglect or over-anxiety to help himself, resorts to harmful muscular activity.

To secure the most perfect fixation, the profession resorts to splints, and sometimes the object of fixation is defeated by the very means adopted to secure it. This is illustrated in the case of the long rectangular splint used by many practitioners in *all* fractures of the humerus. A glance at Fig. 1 will show that the upper fragment receives no support from the splint, while, when the hand is removed

FIG. 1.



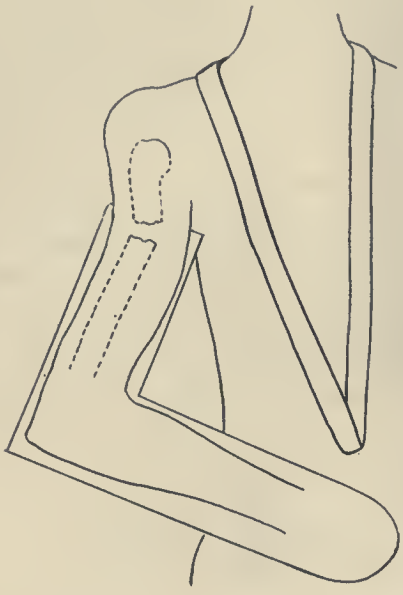
from the sling (as it invariably is as soon as the soreness leaves the part), the long splint will itself compel the fragments to separate as in Fig. 2. In such a case my practice has been to place thorax, shoulder, arm, and forearm in a plaster-of-Paris splint.

When suffering from fracture in the upper third of the humerus shall the patient be permitted to rise and go about? If we ask those in whom non-union resulted, they will tell us that attempts to rise in bed always caused the fragments to move. Whether or not I have seen an unusually large number of ununited fractures I cannot say, but the operation for their relief is so formidable, and the entire loss of time so great, that I now insist on recumbency in many cases that I would formerly have permitted to

[1] Read before the College of Physicians, Philadelphia, December 2, 1891.

rise. It was a remark of my late gifted colleague, Dr. Richard J. Levis, that there was as good reason why a man should go to bed for a fractured clavicle as for a fractured femur. Certainly the bed is the place for the most perfect rest, and under no circumstances is rest more desirable than when Nature is repairing a fracture.

FIG. 2.



I have stated that insecurity of fragments is the chief cause of non-union. Authors speak of the interposition of muscular tissue as a possible cause. If this is slight, the repair is not affected; but if

FIG. 3.

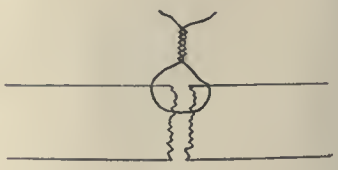
the two fragments are widely separated, when fragments transfix muscular fiber; or when in the leg or forearm a considerable fragment is lost from one bone only—under these circumstances non-union may take place. I was taught a useful lesson in one of my cases[1]: After cutting down upon the fractured parts, I found the fragments widely separated, and the fractured surfaces facing in opposite directions (Fig. 3). They had made a half-revolution upon each other, and were as distinct as if they had been in separate individuals. An interesting feature was the peculiarity of the healing over of the ends of the fragments. They each resembled the stump after amputation. In amputations Nature seems conscious of having no splinting to do, and hence we see no circumferential bone-proliferation, no temporary core, but instead a healing over with compact tissue. In my case Nature seemed to recognize that any attempt at union would have been useless, and therefore made no effort.

Surgical methods to secure bony repair. These are: (1) to stimulate reparative action without penetrating the seat of fracture; (2) to stimulate reparative action by means of irritants carried to the seat of the injury; (3) to boldly expose the fragments and reunite them by means of artificial agents.

I shall confine my remarks to the last head.

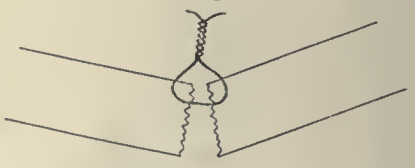
Operations that expose the fractured surfaces vary in degree. The simplest method of uniting the bones is by means of wire. A small awl or small chisel is usually carried to the seat of injury, and the ends of the bone thoroughly scarified; a wire is then introduced as represented in Fig. 4. In cases

FIG. 4.



so treated the fragments sometimes unite firmly, but it is not that the wire plays any part in fixation. (Fig. 5.) It is rather that the wire by its presence

FIG 5.



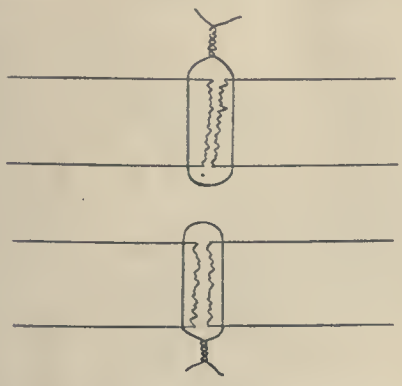
keeps up the inflammatory process so necessary to adequate bone-production. Such cases get well on the principle of the seton, not by the law of fixation by wiring.

The wires are best used in non-union of bones of the forearm and leg. In the arm and thigh, in which we have but single bones, the wire is of little value as a means of fixation. When wires are used to fix

[1] Case treated in the coal regions and sent to Jefferson Medical College Hospital with non-union.

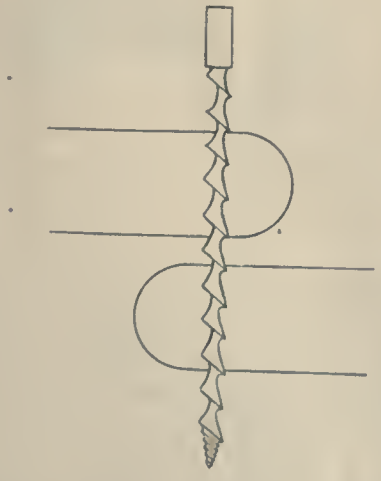
the bones of the forearm, the best results are obtained when the wires pass entirely through each fragment. (Fig. 6.) Under these circumstances the bones are so securely fixed that union is almost certain to follow. In such operations it is well to approach the radius and ulna by separate incisions, and thus avoid communication between them. By this means bridges between the radius and ulna may be avoided, and function restored with pronation and supination. The wires may be retained for two months. I use copper wire—a single strand, soft, pliable, but strong enough to hold the fragments.

FIG. 6.



I have never employed pegging by means of ivory or bone pegs. Theoretically it is a captivating thought to peg fragments with a material that will be absorbed—to close the wound and secure union by first intention. Practically the pegs act as foreign elements, and are not absorbed; suppuration takes place; fixation is not satisfactory; and if success follows, it is not due to the pegs.

FIG. 7.



Nothing can compare in efficacy with the screw as a means of fixation. In some form it has long been familiar to the profession. The elder Pancoast invented one that, from its size and character, was intended (1) to pierce the fragments without preliminary incision; (2) to bind them together; (3) by its presence to excite adequate inflammatory action. As the application of the screw was subcutaneous, it was uncertain in its action; and, as there was a thread the whole length, the fragment could not be approximated after the screw had taken hold of both fragments. (See Fig. 7.) I am familiar with its use in two cases. The first occurred when I was surgical interne at the Philadelphia Hospital. Dr. Maury employed it in non-union of the femur in the upper part of the middle third. The resulting inflammation was considerable, and before the screw was withdrawn repeated hemorrhages of a serious character took place. Bony union was finally established with about three inches of shortening, and the patient, a man in the prime of life, was restored to active manual labor. In the second case the elder Gross employed the screw in the case of a man, aged about forty-five, with non-union in the middle third of the humerus. Union took place with almost complete paralysis of the forearm, probably due to injury of the musculo-spiral nerve.

Volkmann has called attention to the bridge-splice, a means of splicing long familiar to mechanics. The principle is sufficiently well illustrated in the accompanying cuts, and needs no description.

FIG. 8.

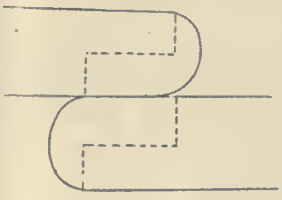
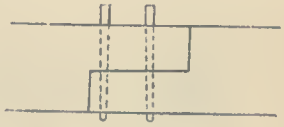


FIG. 9.



I have performed the operation twice, and in each instance secured bony union; but I shall not employ it again, because the result as represented in Fig. 9 is unattainable. The carpenter, with rule, gauge, squares, miter-boxes, and vice, may take two independent pieces of wood and so mortise them as to secure close joints and linear perfection, but the surgeon who makes three independent cuts in each fragment, held at best only in the grasp of an assistant and shaking with each forward and backward motion of the saw, finds that he has no possible guide but his eye, and must not be surprised if his best effort more nearly resembles Fig. 10 than the one given by Volkmann (Fig. 9). In my second employment of the bridge-splice, I encountered a difficulty that gave me much uneasiness, though the result was satisfactory. In this case non-union in the lower third of the femur had resulted, and, after

making my splice and inserting my screw, I was annoyed to have one fragment slip from its fellow, as shown in Fig. 11. This I could not prevent, but the final result was satisfactory.

FIG. 10.

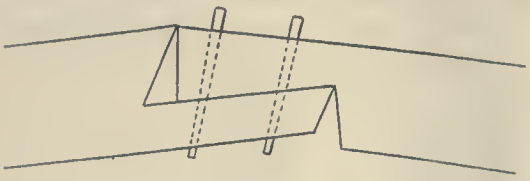
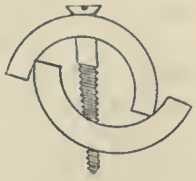
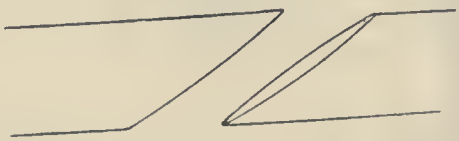


FIG. 11.



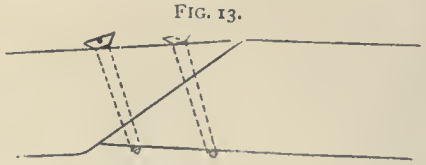
Since this mishap I have confined my efforts to the simple bevelled splice (Fig. 12) in single bones, *i. e.*, in humerus and femur. It gives the best surface-approximation; it exposes the least amount of bone

FIG 12.



surface; it is more easily executed; and with it, when either one or two screws are used, the approximation is more satisfactory than can possibly be obtained with bridge-splice and pegs.

FIG. 13.



I have been using carpenter's screws for about four years. I was induced to adopt them from the fact that screws long enough to project from the wound, like those of Pancoast and Gaillard, were unnecessarily irritating. I select slim steel screws sold at hardware shops, and am guided as to their length by the size of the bone and the obliquity of the screw-holes. *The hole for the screw in the proximal fragment should be so large that the thread will not get a hold upon it. The screwhole, however, in the distal fragment should be small, so that the screw will gain a firm hold.* With a screwdriver I then drive the screw down until the parts are firmly together—sometimes using two screws, sometimes one. I do not usually attach fine wires to the screws to enable me to find them. The screws as a rule are gradually forced from their beds by the reparative process, and can usually be picked from the surface of the bone after two months. I rarely need more than a pair of dressing forceps to remove the screw. After it is removed, the sinus, which has persisted throughout the entire course of treatment, soon closes without any evidence of partial necrosis that would be supposed to follow the use of the screw.

The following case well illustrates the combined use of the screw and wire:

I. S., a colored man, came under my care four months after injury. He had been treated for fracture of the inferior maxilla to the left of the symphysis, a fracture of the ascending ramus remaining undetected. When he came under my care the posterior line of fracture had united with considerable upward displacement, but there was no union at the symphysis. In attempts to close the jaws a single tooth was all that could be utilized, owing to the elevation and overlapping of the fragments.

I operated by an incision exposing the line of union along the perpendicular ramus, and separated the fragments by means of a chisel. A strong wire was then passed through a hole made in the loose fragment (see Fig. 14), thus enabling my

FIG. 14.

colleague, Dr. Hearn, to drag it into position. It was then secured to the perpendicular ramus by means of two screws. The anterior fragments were then approximated and wired. Having bored holes through the jaw on each side the line of fracture, I passed a piece of doubled wire through and made an eye of each, as in Fig. 15. Through these eyes or loops I passed a few short wires, and, drawing these tightly, I twisted them over other transverse wires (Fig. 16). I was then ready to secure the fragments, and, while these were forced into position, I took the free extremities of the wires and

twisted them firmly. I thus secured the fragments, and the result was a useful, presentable jaw. Fig. 17 represents the concluding steps of the operation—which, with modifications, I have repeatedly employed.

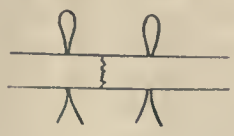


FIG. 15.

FIG. 16.

FIG. 17.

In all my operations, where free drainage has been maintained, I have had a minimum amount of inflammation. In one case abscesses formed in the surrounding connective tissue owing to failure to establish early, efficient, dependent drainage.

THE DIETETIC TREATMENT OF SOME IMPORTANT NEUROSES.

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IN the year 1882 I began a series of examinations of the urine in health and in disease, and under varying conditions of rest and work, from that of moderation to that of excess. As I have already published my observations on the urine under the different conditions of rest and work, including mental work and anxiety, I shall on the present occasion take up only those observations that lead to valuable suggestions in the treatment and management of some of those important neuroses that are sometimes called functional, but which, I think, should be called nutritional, and, in not a few cases, toxic, in their true character.

When I speak of toxic, I mean that from time to time there is formed within the system, as the result of a derangement of the relation between the processes of formation and elimination, some of those chemical compounds that, when in the blood in greater than the normal proportion, give rise to changes in the action of the nervous elements that become evident by symptoms of a very pronounced nature.

The fact that megrim, chorea, epilepsy, hysteria, the forms of insanity affecting the younger members of society, are ever on the increase, points to some cause or causes that are constantly and progressively with us. These causes, acting steadily, become confirmed in the family history, and ultimately ascend in importance and strength to be true diathetic conditions that may run on through a great many generations. We might mention, as examples, the existence of gout, megrim, epilepsy, etc., that weave themselves so closely into the histories of some families. In a paper of mine, some years ago, I showed how the habits of life of some persons in certain places had developed a tendency to phthisis and to kidney diseases. My present object is to show that certain habits of food and occupation have developed a large and important group of neuroses that, once called into existence, baffle the skill of our best therapeutists.

The more specialized and highly evolved any organ is, the more likely is it to become influenced by unfavorable conditions; the highest functions show signs of failure sooner than the lower and simple functions. Thus it would be that under conditions that cause a departure from the standard of true health the more voluntary would fail before the less voluntary. It would be that side of our nervous nature that is least firmly established or organized, that would become unsteady in the discharge of its functions, and, departing from the average, would be regarded as diseased. Again, those parts of the human body that have the most complex work to perform can be most readily perverted or arrested during the course of development. When each individual is born there is given to the new being a certain impetus, a certain momentum, to carry it on into the future to complete its growth and development. Now, there may be inherited tendencies either to prevent or to arrest. These tendencies, that we are pleased to call inherited, had once a beginning—in other words, were acquired at some date in the past. All this is well seen in the fact that some families are for generations prone to dyspepsia, others to heart trouble in some form, others to hysteria and allied affections, and still others to such a state as pseudo-hypertrophic paralysis. While these cases are admitted as true beyond any shadow of doubt, there is still another direction in which heredity is shown, but which is not yet so well understood, namely, that of the minute chemical composition of the body, and the hereditary tendency to variations in it. The long-continued use of a certain line of diet stamps certain characteristics of composition on the solids and juices of the body that, though minute, are very potent. This we see in gout and in rheumatism, in the occurrence in families of bromidroses, and in the existence in others of hyperacidity of the urine. This is chemistry in its hereditary aspects.

Suppose, now, that within our bodies strychnine was formed, and suppose anything altered the adjustment of formation and elimination, so that this powerful agent accumulated within the body. Tetanic spasms would then result. Or, suppose that the animal economy daily produced a certain quantity of opium, and that this formation continued to go on in excess of its discharge. A state of increasing coma would ensue. But, within our bodies there are naturally formed both convulsants and soporifics—such materials as will produce spasm on the one hand, and coma on the other. We are all familiar with uremic coma; but perhaps all are not equally familiar with the convulsive movements due to an excess of uric acid in the circulating fluids of the body; and yet such formation takes place. It is to this question that I wish to devote some attention, as it is one of much more importance than has been generally thought.

With regard to uric acid in the blood, I am quite in accord with the work already done by Dr. A. Haig. An excess of this agent can act as a direct exciting cause to convulsive attacks. I have for a long time had under treatment a well-developed gentleman, now in his thirty-third year, who has had epilepsy since an attack of inflammatory rheumatism in his seventeenth year. I have often examined his urine, and always find a deficiency of uric acid before attacks, an excess during and just after an attack, and then a deficiency afterward again. To put this to the test, I have on several occasions told him to eat meats, canned salmon, lobsters, cheese, and eggs freely, and to drink ale, beer, or stout at meals. As the direct outcome of this the epileptic attacks became more frequent and prolonged, the primary pallor of the surface more distinct, the convulsive movements stronger, the subsequent paralysis greater, the after-sleep and headache more intense, than when care was taken to use less meat, and no beer or ale.

The lessons from a case like this cannot be lightly passed over. Here is an instance in which certain articles of food and drink have a direct influence upon the attacks. Whether it is that the ingestion of so much nitrogenous food produces an unstable condition of the central nervous matter, or whether the attack depend upon the excess of uric acid thus formed, is a little difficult to determine. One thing, however, remains clear, and that is the advice to reduce to a minimum all nitrogenous forms of food. The case is cited as an example, but I have a number of epileptics that have been greatly benefited by allowing them no animal food, except milk, and cutting off from their dietary all wines and beers. In this way they have been able to get on with much smaller quantities of the bromides; and this has also proved another advantage, as we all admit that the prolonged use of bromides is not devoid of evil.

I cannot say that all epileptics are victims to an excess of uric acid retained within the system. This could only be decided by experience with a large number of cases and as the result of many observations. But, be this as it may, there is now no doubt whatever in my mind that the rigid restriction of the diet, in the manner indicated, will be found a means of much help in the treatment of this class of patients. Connected with this view of the case I found epilepsy frequently associated with a history of rheumatism and gout, either in the patient or in the family to which he belongs. For this reason, along with the bromides, I have often combined the salicylates to wash the uric acid out of the system, and at least relieve this source of irritation. As I have previously said, "I would not go the length of asserting that epilepsy is a food-diathesis, yet I am strongly inclined to think that it tends that way." There is a variety of nervous economy to which certain lines of food prove injurious, and I think epilepsy is a good example of this.

In hysteria I have often found an excess of uric acid in the urine at the time of the attacks, but I have not made a sufficient study of these cases to venture any positive opinion. On the allied condition of neurasthenia, however, I have no doubt but that the uric-acid condition has considerable influence. The lithemic condition has often been noted in these cases, but whether to regard it as cause or effect has remained in doubt. The greater the quantity of uric acid excreted in the urine per diem the greater will be the degree of the depression, or neurasthenia. The brain is very anemic, and as a consequence badly fed. It is not only starved, but in addition it is poisoned. It is in this way that we can account for the despondency and melancholia of this class of sufferers. I have now the record of a large number of observations made on the urine in such cases, and just in proportion to the excretion of uric acid is the depression or neurasthenia.

In the treatment of these cases I have been led to depart a good deal from the plans usually adopted. The patient is at once placed upon a milk and farinaceous diet. All stimulants in the form of wine, beer, etc., are strictly interdicted, and rest and quiet are advised. The patient is then ordered opium in solid form in doses of from gr. ¼ to gr. 1, three times a day. Great care must here be taken that the patient knows nothing of what is being given; as soon as the stage of depression is passing away, the dose of the opiate is to be lessened until it is wholly withdrawn and a tonic is substituted for it. In the meantime put the patient on a mild

course of the salicylates, and maintain this until the excretion of uric acid is reduced to the normal. Should massage and electricity be required to recall lost energies, by all means use them, but not until the foregoing plan has been tried for some time.

The use of opium in these cases is very helpful. It produces a feeling of ease and comfort in the patient that aids the other means of treatment. In addition, it affords the system a much-needed rest. I mean more than a mere physical rest. There ensues a quiet to all the functions, and an arrest of waste, that is very much needed in all these cases of neurasthenia. Under the influence of the judicious use of opiates the patient's attention can be withdrawn from the habit of introspection to take a wider interest in outside affairs. In other words, the patient thinks less about herself or himself and more of other things. In the meantime, by a properly regulated diet and the use of the salicylates the uric acid that has usually been accumulating for a long time is washed out of the system. The limitation of the food to milk and farinaceous articles steadily improves the appetite. Some of the mineral waters, as Frederichshall or Carlsbad, are decidedly useful in clearing the system.

A few words on chorea. The value of arsenic is fully established in this disease. It often fails to do all the good it might, because it is not given freely enough. This drug must be pushed to the full point of tolerance; when it is necessary to leave it off for a day or two begin again with the full doses that were given at the time of the interruption. But, as I have made several examinations of the composition of the urine in this disease, and have found an excess of uric acid present, and consequently in the blood during attacks, it has been my custom, along with the arsenic, to give the salicylates. This has another explanation in the fact that chorea so often occurs in persons with a rheumatic history. Potassium iodide has, in my hands, sometimes been very useful, especially if there are any cardiac symptoms. Another drug that is not used in chorea nearly so frequently as it merits is opium or morphine. A hypodermatic of morphine given to a patient twisting around with choreic movements will convince the most skeptical as to its value. The movements should be nearly controlled by the opiate, and abundance of sleep secured by the same means. A thoroughly nourishing diet of milk and farinaceous food must be pushed freely, in order that the tone and strength of the patient, which are low, be made up with the utmost speed.

I now come to the last disease I intend touching upon at this time, namely, megrim. I wish to enter my unqualified protest against the terms "bilious sick-headache," "dyspeptic headache," and all such names as would lead to the belief that the attack of headache is due to mere indigestion. Nothing has done more to retard true pathology and therapeutics than the prevalence of such a view of these attacks.

To begin with, I have not found a single case of megrim that has not been a pure diathetic condition. I am perfectly prepared to stand by the assertion that true megrim is a lithemic crisis. This state causes the hard pulse, contracted arterioles, headache, vomiting, and finally the regurgitation of bile into the stomach and its rejection by the mouth. I have patients who will pass an entire year without a single attack, provided they watch their diet. Meat, cheese, eggs, and fish with red flesh, I order them to abstain from, and to use no wines or beers. So long as this advice is followed all goes well.

The treatment of these cases resolves itself into two parts—that of the attack and that of the diathesis. First, then, as to the attack. The patient calls for relief. If the attack is seen early a full dose of phenacetin, or antipyrin, may be ordered, and repeated if necessary. These agents, however, are not always sure to succeed, and the pain goes on, uninfluenced by them. Vomiting may ensue, and prevent the action of any medicine given by the mouth. Now, there is no need for this failure. Give the patient a hypodermatic injection of morphine, and rest, and ease will soon follow. The objections to this treatment are that there is pain after the morphine ceases to act, and that a morphine-habit may be contracted. Neither objection holds good. Give salicylates freely while the patient is under the influence of the opiate. By this means the uricemia is got rid of, and the angio-tetanus removed. This being the case there will be no further return of the headache. There is no danger of forming a habit, when we bear in mind that with proper treatment the attacks will practically cease.

The treatment in the intervals of the attack is the main point to which attention should be given. The uricemia must be corrected, and to this the attention must be steadily directed. I maintain that if patients will only live up to the information we are able to give them, they may have the control of their attacks of megrim in their own hands. By the complete denial of all ale, beer, porter, etc., and of all kinds of wine, and absolutely refusing all animal food, except milk, the diathesis on which it depends must entirely disappear. Just lately a lady consulted me for attacks of headache, which she said always occurred on the right side. She had often had slight experiences of muscular rheumatism, and sometimes she had had pains in her small joints, particularly in those of the fingers. Her family history showed the existence of rheumatism. Her daughter, just eleven years of age, is quite subject to migrainous paroxysms. There are no ocular

defects. The mother complains of feeling very languid in the mornings, and brighter in the afternoons and evenings. This is very typical. She says that she has been a free meat-eater, and that while nursing, she drank a good deal of beer and ale. This is a sample of many others.

There is one point to which I would specially call attention. It is that, just before an attack of megrim, and during the early period of the attack, there is almost invariably a very abundant passage of urine of low specific gravity and high acidity. From this feature alone many of my patients can tell that an attack is coming on, and can ward it off by a full dose of opium and the free use of the salicylates. The reasons for this line of treament I have already given.

Another striking feature of megrim is that patients so afflicted have usually morning headache. I have at the present moment before my mind a number of these cases. This morning headache passes away by noon, and the afternoons and evenings are usually spent comfortably.

In the case of children with headache while attending school, there is always a very noticeable irritability of temper. This irritability of temper and headache can frequently be shown to be connected with an excess of uric acid in the blood, and I find it just as frequently yield to a course of salicylate treatment, and the use of milk instead of meat.

One clergyman, now the principal of a college, told me that he would often not have been able to go through with his services on Sabbath had it not been for a free glass of acid sherry wine. Here we have the whole solution in a nutshell. The acid wine, for the time being, reduced the amount of uric acid in the blood, precipitated it out of solution, relieved the tense, hard pulse, gave the brain more blood, caused a free flow of urine, and enabled him to discharge his duties.

HYPERTROPHIC CIRRHOSIS OF LIVER.

With Report of a Case and Autopsy.[1]

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WHILE the clinical history and morbid anatomy of this rare form of chronic interstitial hepatitis may have been described as an anomaly occurring in the ordinary form of atrophic cirrhosis, it was not differentiated as a distinct disease until within comparatively recent years. To the French is due the credit of its recognition. The first mention as such was by Hanot in 1875, who reported a case of "hypertrophic cirrhosis with chronic jaundice." In the following year Charcot set forth its essential character so faithfully as to give rise to the appellation "Charcot's cirrhosis of the liver." Many English writers, however, are disposed to dispute its existence as a distinct form, and attribute the enlargement to fatty or amyloid infiltration. As exceptional complications, enlargement of the liver from these causes may occur in Laennec's cirrhosis, but the morbid change is characteristic of fatty or amyloid liver rather than of sclerosis, and bears no relation to the disease under consideration.

Professor Loomis, in his *Text-book of Practical Medicine*, as late as 1884, says: "There is a form of interstitial hepatitis that has been called hypertrophic cirrhosis, because the liver is markedly increased in size, sometimes reaching six or seven times the normal weight. But the fibroid change, the yellow staining, the atrophy of liver cells, the fatty change at the periphery of the lobule, are the same as in the ordinary variety, *the only difference being a marked increase in the size of the liver.*"

One source of error has arisen through failure to distinguish it from the first stage of atrophic cirrhosis, which is also characterized by enlargement. Macroscopically, should death afford an examination of the liver in the early history of the disease, the two affections might be confounded, but when pursuing their usual course, the atrophic form eventuates in diminution in size of the liver, while in the hypertrophic the enlargement progressively increases and always remains until the patient succumbs. Aside from the increased size of the organ, the clinical history is so widely at variance with that of atrophic cirrhosis as to imply a distinct disease, even were the pathology and etiology the same.

The degree of obstruction to the portal circulation is a discriminating point. Hyperemia of the gastro-intestinal mucous membrane, hematemesis, severe epistaxis, formation of hemorrhoids, petechial extravasation, enlargement of the internal abdominal veins and establishment of collateral channels of circulation, enlargement of the superficial abdominal veins and formation of the so-called "caput Medusæ," early ascites from increased tension of the portal circulation, with the characteristic globular abdomen so common in the atrophic form—these are wanting, or exist to a very slight degree. Instead of these there is early jaundice, intense and permanent in character, simple anorexia and nausea with constipation, whereas in the contracted liver the discoloration amounts to a slight dinginess or sallowness of the surface, slight yellowness of the conjunctivæ, and the gastro-intestinal disturbances form more serious complications—as nausea and vomiting, ulcerations of the mucous membranes, hemorrhages, diarrhea, and dysentery. The differential diagnosis of the two affections may be summed

[1] Read before the annual meeting of the Montour County Medical Society, June, 1891.

up as follows: In atrophic cirrhosis there is a slight enlargement of the liver, followed by contraction, with more or less nodular surface, early ascites, absence of jaundice, obstruction to the portal circulation, gastric disturbances with diarrhea, and a greater inclination to hemorrhages. In the hypertrophic variety there is progressive enlargement with smooth surface, absence of ascites, early jaundice, becoming intense and general, less obstruction to the portal circulation, less gastric disturbances, more frequent constipation, and little tendency to hemorrhages. In its pathological histology we would naturally expect to find the true differential characteristics. The morbid change is essentially the same as regards the elements; that is, in both forms it consists of hyperplasia of connective tissue, resulting in degeneration of hepatic cells. But the point of election in this proliferation of new material differs. In the atrophic form it has been clearly established that the initial deposit occurs around the radicles of the portal vein in the interlobular spaces, consisting of an infiltration of round and spindle-shaped cells that develop into a fibrous texture, that by shrinking resembles cicatricial tissue. The bands thus formed between the lobules or groups of lobules, are seen ramifying through the liver in various directions, and are still more highly organized by the production within their meshes of newly formed bloodvessels directly connected with the interlobular veins. The blood furnished the hepatic cells, both for nutritive and glycogenic and bile-producing functions, by the hepatic artery and capillary divisions of the interlobular veins, penetrates the lobule at the same point. By compression of these radicles the nutrition of the lobule is diminished or ceases, and atrophy of the cells results. Probably direct pressure of the interstitial deposit upon the periphery of the lobules assists slightly in producing this effect. The remaining healthy cells and those of contiguous lobules undergo hypertrophy, often amounting to two or three times the natural size. Thus, side by side, we have a hyperplastic deposition of connective-tissue elements associated with enlargement of hepatic cells, and a diminution of structure through contraction of new tissue and atrophy of other cells, producing in the progress of the disease either hypertrophy or atrophy of the whole organ according to which process preponderates. The interlobular bile-ducts survive the destruction of their respective lobules.

These changes in structure would necessarily produce obstruction of the portal circulation, while the bile, although decreased in amount through loss of secreting surface, is carried off in the usual way.

In hypertrophic cirrhosis the opposite condition prevails. The deposition of interstitial connective tissue has its origin in the radicles of the interlobular bile-ducts. According to French writers, "although no obstruction of the secretion nor inflammation can be demonstrated in the larger bile-ducts, the interlobular canals become dilated and ramify into finer ducts, forming immediately in front of the margin of the lobule a network from which still finer branches proceed, to disappear between the hepatic cells." This capillary network naturally lies within the peripheral zone of the lobule, but by atrophy of surrounding cells appears upon its margin and might be mistaken for newly produced vessels. "All these canals are lined with cubical epithelium; in the ultimate divisions the caliber often appears to be plugged with this epithelium. In the vicinity of these canals the indications of this new formation of connective tissue are the most distinct." "Hanot, as well as Charcot and Gombault, base upon these appearances the theory that in cases of hypertrophic cirrhosis accompanied with early jaundice the primary lesion consists of a (spontaneous) inflammation of the interlobular gall-ducts induced by some unknown cause, and that the interstitial proliferation takes its start from the walls of these ducts."[1] Frequently the process extends to the intralobular ducts, and minute bands of fibrous tissue are found penetrating the lobule well into its interior. Unlike the other forms of chronic interstitial hepatitis, the distribution of the new product is more regular, giving the cut surface a uniform appearance in color and consistence.

As the portal circulation is not extensively interfered with, the cell-degeneration through nutritive changes would be small as compared with that found in the atrophic form, and that that does occur is mainly due to pressure upon the periphery of the lobule. Likewise, for the same reason, the total amount of blood in the organ is but slightly diminished, although through increase of size there may be apparent anemia. The bile-secreting function is also less impaired, but by occlusion of the biliary radicles the bile remains in the lobules until absorbed by the bloodvessels and deposited in other tissues as a general icterus. The increase in size as compared with the atrophic variety is thus due to additions of connective tissue without a corresponding degree of cell-degeneration, less diminution of blood, and greater accumulation of bile.

With these preliminary considerations I have to report the following case that I deem of interest, as I have been able to find but two other cases reported in this country, one by W. Osler,[2] and

[1] Ziemssen's Encyclopedia of Practice of Medicine, vol. ix, p. 217 *et seq.*

[2] "Cirrhosis of Liver with Enlargement, No Ascites, etc." Montreal Gen. Hosp. Path. Reports, 1877, i, 56–60. Also reprinted in Canada Medical and Surgical Journal, Montreal, 1877, vi, 249–253.

another that occurred in the Massachusetts General Hospital.[1]

R. A. McC., female, aged sixty-nine, a native of Ireland, resident in the United States twenty years, the widow of a banker, was admitted to this hospital October 15, 1890. Her husband has been dead about twenty-five years. She has no living children, and she has had one miscarriage and several abortions. The history of the case is meager. She appears to have been more than ordinarily intelligent, of good family, rather fond of the good things of life, and from her own statement accustomed to alcoholic beverages, but to what extent was not satisfactorily ascertained. She says her father died, aged eighty, as also her mother and one brother, of phthisis. There was no hereditary neurosis, syphilis, gout, or rheumatism discovered. She was about the average height, slender frame, probably in health weighing 125 pounds.

On admission she was much emaciated and physically badly impaired, the pulse 108, full and regular. The heart-sounds were normal, the tongue dry and red in the center, the bowels torpid, facies dejected; memory for distant events fair, for more recent ones apt to be faulty. She was deeply jaundiced over the entire body. The liver was enlarged, as was evidenced by the increased area of dulness and the rounded edge felt below the line of the ribs, and it was slightly tender on percussion. There was no ascites or enlargement of the superficial veins, and the abdomen was rather flat in dorsal decubitus. The lungs were normal. The left leg was edematous, the right helpless and painful at the hip-joint, attributed by her to a fall sustained about ten days previously, but by authorities to an apoplectic stroke, for which there is now no visible proof. There are excoriations on different parts of the body, due to want of care. She is weak and entirely helpless, and was carried to the hospital on an improvised stretcher. The previous history was uncertain, but friends state in a general way that she had been ailing for two or three years and that jaundice had existed about a year.

The urinary analysis was as follows: Quantity diminished, color brownish-yellow, reaction acid, sp. gr. 1016, the odor offensive, with a heavy white deposit. It contains a large amount of bile, the existence of albumin not satisfactorily determined, but thought to be present. Microscopically it shows bacilli, pavement and round epithelial cells, a few leucocytes, granular matter stained yellow, a few granular casts, and leucin crystals. She was ordered nitro-muriatic acid, gtt. v, t. d., and a diet largely milk and soft farinaceous articles, with lean steak and eggs.

On November 8th, no marked change had occurred. The pulse was full and strong, the appetite capricious, the icterus continuing unabated. She complained of fulgurant pains in different parts of the abdomen and of looseness of the bowels (a false impression occasioned by tenesmus, the condition being in reality one of constipation). The edema of the limb has disappeared, and she has partially regained the power of the injured one. She remained helplessly in bed. On December 13th, the physical condition was somewhat improved and she was disposed to help herself. She was still deeply jaundiced, color of varying intensity. The bowels were kept regular by one-drachm doses of Rochelle or sodii phosph. once daily; the stools were clay-colored, of putty-like consistence, and much compressed from constriction of bowel. There were abdominal pains of paroxysmal character, lasting from three to four hours, which usually came on toward morning, and referred to different points. Pruritus was very annoying, and small abrasions have been caused by scratching. There was no dropsy. On January 20th, the jaundice had increased, some days the skin assuming a bronzed tinge, due probably to changes in the activity of the renal elimination. The bowels were unchanged, save that she passed small quantities of blood with the stool and complained of hemorrhoidal pains. There was tenderness on palpation over the entire abdomen, but this was most marked in the left lumbar region. She had pain in the groin and generally throughout the abdomen, with cramp-like paroxysms at irregular times. There was no ascites, but slight tympanites had developed. Pulse 84, full and bounding, but easily compressible; superficial veins somewhat distended; previously these veins were entirely emptied by slight stroking and were seen to very slowly refill, showing the low tension of the venous system. The tongue was clean, smooth in the center, and moist. The appetite was failing, and slow emaciation was going on. There were profuse sweats during sleep. On February 22d, the most noteworthy feature of the past month had been accession of a mild fever resembling hectic, the morning registration being 99.4°, the evening ranging between 100° and 101°, patient often mentioning chilly sensations. She had frequent slight epistaxis. On March 14th, enlarged lymphatic glands in the right groin were noted. A distinct tumor was now found occupying the right lumbar and inguinal regions, having a well-defined, rather sharp border anteriorly. Percussion elicited superficial dulness with deep tympanitic resonance, continuous with the line of the natural liver dulness. Occupying the exact position of the cecum and ascending colon, it had somewhat the appearance of a fecal accumulation. The bowels were moved regularly by means of laxatives. There were no gastric symptoms, but she complained of constant cramp-like pains in the epigastrium, probably due to pressure upon the solar plexus by the enlarged liver. There was no special pain or tenderness in the liver itself. From this time to April 25th, typhoid symptoms increased *pari passu* with the liver degeneration and diminished vitality, the temperature ranging between 99.5° and 100.4°. Subsultus with increasing hebetude were attending phenomena. There was no change in the icterus and character of the dejecta, and no hemorrhages. She complained of pain in the rectum; occasional nausea, no vomiting; feet becoming edematous through general debility, the liver steadily increasing in size. On May 3d, after an unusually restless night, she was

[1] A. L. Mason: Boston Medical and Surgical Journal, 1886, cxv, 281.

found with a pulse of 102, full and compressible, an axillary temperature of 102°, the bowels constipated, notwithstanding the usual laxative dose. She showed increasing signs of mental hebetude. On May 5th, the stupor was increasing and it was now somewhat difficult to attract her attention, but when aroused she answered questions. The stomach was still irritable, rejecting much that she took. She complained if moved or touched. Death occurred on May 7th.

Autopsy—seven hours after death. This showed that the body was greatly emaciated, probably weighing ninety pounds, intensely and uniformly jaundiced, the skin smooth and soft. The abdomen was much distended and tympanitic over the whole surface. A deep dulness obtainable over the right hypochondriac and lumbar regions. The lower border of the liver readily felt on palpation some distance below the line of the ribs. On opening the abdominal cavity, its walls and the omentum were found devoid of fat, the bowels much distended with gas, empty of solid material, normal in appearance, except the entire sigmoid flexure and most of the descending colon, about 1½ feet of bowel, which was evenly constricted and its coats much thickened; opened longitudinally, it measured from 1 to 1½ inches transversly. This change was evidently the result of an old colitis and explains the very attenuated character of the stools. There was no dropsical effusion in the peritoneal cavity.

The liver was much enlarged, extending downward into the right lumbar and across into the umbilical region. The lower edge of the right lobe occupied a line on the right drawn from the center of Poupart's ligament to the umbilicus, thence upward to the epigastrium, and across toward the left hypochondriac region. The lower edge of left lobe was sharp, while that of the right was more rounded and smooth, the natural contour being but slightly altered. The gall-bladder was much enlarged, and contained about 4 ounces of thin bile, without concretions. The weight of the liver and empty gall-bladder was 76 ounces. The capsule was somewhat thickened, and in places slightly adherent. There were also slight adhesions with the diaphragm and between the gall-bladder and bowel, showing an old peri-hepatitis. The surface was smooth or very finely granular, the color of the surface being not unnatural. The liver on section cut hard, the structure was dense and had the appearance of an extensive deposit of fibrous tissue evenly distributed throughout the whole organ. It was rather anemic and slate-colored. Patency of the common bile-duct was not determined. The kidneys were enlarged to 7½ ounces, the capsule adherent in places and showing somewhat the same degeneration as the liver. The spleen weighed 10 ounces and was considerably congested. The stomach was somewhat dilated with gas, but there was no evidence of gastritis or engorgement of vessels. The intestinal tract was also healthy, except as above stated. The mesenteric glands were not enlarged, and there was no evidence of engorgement of any abdominal bloodvessels.

From the general condition found, it is evident that the disease of the liver was one of hypertrophic cirrhosis.

I am indebted to my colleague, Dr. A. R. Elliott, for notes of the last few days of clinical history, and the post-mortem examination. Through inadvertence specimens were not saved for microscopical examination.

The various affections that might be mistaken for hypertrophic cirrhosis because associated with enlargement of the liver, are amyloid and fatty degeneration, cancer, and hydatid cysts. Amyloid degeneration is also characterized by an equal enlargement of the liver, smooth surface, firm, hard, resistant feeling, and a like enlargement of the spleen. But the edges of the liver are sharp, the affection is a painless one, jaundice is absent—the skin being pale and leukemic instead—amyloid degeneration of other organs occurs, and etiologically there is a history of syphilis, prolonged suppuration, or disease of the bones. Fatty liver does not attain the same size, has rounded margins, smooth surface, is soft and flabby. There is no splenic enlargement, an absence of jaundice, the skin shining with fat, and velvety. There is a disposition to fatty deposits in other organs, and no abdominal tenderness. There is a history of alcoholism, long-continued wasting diseases, and high living with sedentary habits. Cancer is accompanied by tenderness of the liver, hard nodular enlargement, giving it an irregular shape, more rapid development, cancerous cachexia, and frequently in the latter stage jaundice and ascites, an hereditary predisposition, and is usually secondary to cancer of other organs. Hydatid cysts present few of the symptoms of hypertrophic cirrhosis. The enlargement is nodular, large, smooth, soft and elastic, and without pain. The peculiar hydatid fremitus is sometimes obtained on percussion. By use of the exploring-needle a saline fluid, containing the hooklets of the echinococci, may be withdrawn, which settles the diagnosis.

The early stages of hypertrophic and atrophic cirrhosis cannot be distinguished from each other, but, as already pointed out, in the former variety as the enlargement progresses a destructive train of symptoms supervenes. In both varieties the inception is so insidious that remedial aid is not sought until the characteristic changes occur. The etiology does not differ essentially from that of the atrophic form, since in the majority of cases alcohol is the prime factor. Long-continued malarial affections, and certain infectious diseases—as typhus and cholera—predispose to the affection.

As regards prognosis, the disease when fully established is always fatal, after running a course of from two to five or more years, the termination usually being by asthenia, but frequently ending in a

typhoid state consequent upon toxemia. Convulsive seizures are not unlikely to occur.

The treatment is usually based upon the expectant plan—that is, the physician expects the case to die, and is seldom disappointed. For a systematic treatment the same remedies have been advocated that are used in the atrophic form—the iodides, mercury, muriate of ammonia, arsenic and iron.

In atrophic cirrhosis Semmola[1] regards an absolute milk diet as a positive remedial measure of undoubted curability, provided the regressive processes have not advanced to any great extent, and he even claims a diminution in severity of all the symptoms after such change has become thoroughly established. As the fundamental histological change — hyperplasia of connective tissue—is the same in both affections, the same benefit might be expected in the early history of the hypertrophic form. At any rate, as the principal indication is to maintain the general nutrition unaided by the function of the liver, we have in milk, if not too rich in fats, an easily digested article worthy of trial.

In the case reported, the measures adopted were: acid. nitro-muriatic. gtt. v–viij, t. d., during the first months; small doses of Rochelle or sodii phosph., artificial digestants, milk and farinaceous diet, with lean beef, fresh fish, and eggs. Small and infrequent doses of morphine were given to relieve pain when unbearable, and whiskey when the vital powers urgently required stimulation: manifestly a sustaining treatment, rather than one directed against the progress of the disease.

MEDICAL ETHICS GONE TO SEED.

By JAMES H. BELL, M.D.,

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MUCH has been written in praise and in censure of our system of medical ethics. The question of the effects of the code on medicine and medical character has been so often brought up for discussion, either in the way of attack or defence, that it seems almost a waste of time to make it the subject of an additional essay. But the present wide prominence and damaging effects of certain misconceptions and practices arising out of these relations, and the great practical importance of forming a right estimate of them, would appear to demand a further, and continued, participation in their treatment.

The basis and general character of all discussion upon this fruitful theme are, curiously enough, comprehended in the general belief that medicine is practised under the dominion of a code of ethics and that the code is so universally, wisely, and impartially operative, that it is effectively employed in the redress of great wrongs and in the necessary defence of great rights, whether of persons or of principles, involving the welfare of medicine and of medical men. This flattering and partial view of the extraordinary power and efficiency of the code is based on the assumption that its provisions governing individual conduct are rigidly enforced. As a matter of fact, however, the code is nothing more than a kind of authorized creed, expressing, in fair language and spirit, the assumption by a class of certain moral and protective privileges and responsibilities. It dwells upon the physician's duty to his patient, to himself, his professional brother, and to society at large. It urges him to observe, in his professional walk and conversation, those higher graces of manner and feeling that in social life are the distinguishing marks of culture and refinement. It is pronounced, too, in its disapprobation, intolerance, and proscription of this and that and the other thing. But there are no powers in the code back of these visionary pronunciamentos that have the effect of sensibly influencing professional conduct at the present time. This, in a word, means that subscription to the code does not necessarily influence subsequent behavior, does not prevent a man from pursuing his own particular business in his own particular way.

It should be observed, perhaps, in this connection, that the successful operation of a law, or system of ethics, depends on more than the mere ability to punish violations of its provisions. It depends very largely on the intellectual and moral susceptibilities of the individual units composing the class it is designed to affect; and the character of the individual units in these provinces of the mind, is the result of primal and determining influences widely varying and remote, and comprehend man in all the relations of life. Men do not live and act and feel by generalized rules, and it does not appear to be in the economy of Nature, or rather it should be said in the economy of man, to devise a system of rules that shall compel men thus to live and act and feel. In the family government, where the conditions for their successful employment would seem most favorable, such rules are partial failures, or even something worse. The switch and moral suasion, used separately and in supposed judicious combination, have been tried in vain to subdue the rebel twists of human nature. Law, looking into a larger field, does not prevent the failure of banks, or bank presidents from sailing away to Brazil. The doors of our rumshops are by law closed on the Sabbath day, but

[1] Transactions of International Medical Congress, Amsterdam, 1879.

the "speak-easy" flourishes in perpetual lawlessness, and so on to the end of the calendar, and through all the gradations of crime.

But, as to medical ethics, it should be remembered that the code was originally addressed to a profession that was supposed to be animated by a nearly common intelligence, resolution, and purpose. And the prevailing confidence in the unanimity of medical character and purpose was a partial justification of the belief that the code would be free from the oversights and inconsequences that in the very nature of things would follow an appeal to divided and antagonizing interests. It came into existence, moreover, at a period in the history of medicine when men were qualified by more than professional learning and experience for the practice of medicine. They were also qualified for it by general culture, by temperament, and by habits of life. They were keenly alive to professional questions and interests, entertained enlightened and very decided views concerning the better government of medicine, and opposed every movement that threatened, even remotely, to lower its ethical character. The code was born of this conservatism and devotion to high principle, and deservedly received the earnest and united support of the medical men of the time.

"Quantum mutatus ab ilio"—how changed from that—are the words Wycherly in his old age wrote under the portrait of his youth. We might apply them to the ethical character of medicine to-day as compared with the ethical character of medicine fifty years ago. We are living under a new medical dispensation, brought about by the readjustment of old principles to a new object. And that object is commerce.

It is the high genius and aim of trade, *per se*, to accumulate a large bank balance, to get itself on in the world by any and every legitimate means in its power. This is its proper business. Its vast resources and tremendous energies are engaged in hard-fisted, selfish enterprise. It has no refined sensibilities, recognizes in practice no self-retarding principles. It has no time to dream away in Arcadia. It says boldly, and with the true Gradgrind spirit and emphasis, "The devil fly high with ethics!" This is the case with medicine to-day. The code is obsolete. Its boasted omnipotence and security are attempted delusions. It offers nothing that excites the modern doctor's Yankee suggestion of readiness to take possession of a good thing. It does not create, enforce, or in any way practically sustain a line of conduct that the keen instincts and practices of trade shall respect and observe. It offers, on the other hand, no perceptible or admitted distinction to the man who is, by education and reason and good taste, ethical at heart and in practice. The burdensome vexation of a distinctly commercial purpose and a distinctly selfish personality in medicine have obscured all that was at one time so abundantly and beautifully predominant in the code and in medical character, and made them appear too remote and impracticable for everyday life. And this fact is made practically significant in more ways than one.

The most noteworthy and perhaps culpable departure from ethical consistency, and the one, moreover, that reaches furthest in its bad effects and consequences, was taken, and is even now industriously followed, by the medical schools of the country. I refer to the admission into medical schools of men who are, by earlier education and habits, utterly disqualified to assume the ordinary duties and responsibilities of professional life. And although the general evidences of the bad effects of a course so purely and undeniably selfish and commercial are plainly to be seen, selfishly interested persons will claim that the system is not selfish, or only partially and unavoidably selfish, and that it is the duty of the *State* to obviate the evils indirectly growing out of *illiteracy in medicine* by the introduction of a better system of public schools. This bold attempt to hide the truth under a false issue is what logicians would call a *non sequitur*, a consequence that does not necessarily follow from the cause. It is in truth a play of hide-and-seek with principles they are under some compulsion to outwardly observe. To show the utter fallacy of such conduct and reasoning, it is only necessary to observe that there is no law compelling the medical schools under its jurisdiction to accept all uneducated and feeble-minded persons who may apply as candidates for the doctor's degree. Their management, however, would suggest the operation of some such legal provision. The active cause, therefore, of the death and decay of medical ethics is justly attributable to the management of medical schools, and I venture the assertion that the cause is likely to continue active as long as the question of numbers is of pecuniary interest to those engaged in the responsible work of teaching.

The State may bestir itself and do something in the course of the coming century to check the hatching-out of doctors by the present unnatural and disgraceful process of incubation. It might, for example, exclude from medical schools men whose most labored efforts at correct utterance are murderous innovations upon the purity of the mother tongue, and whose orthography exhibits an utter disregard for monosyllabic propriety. It might even go further, and at once extinguish nine-tenths of the medical schools of the country, by making a rudimentary knowledge of grammar and arithmetic necessary qualifications to matriculation. It is idle to pretend that such an exercise of executive discretion and power, in a matter of

this importance, would be ill-advised or premature. For, in the absence of legal restriction, or like influence for good, we already have a very considerable outcropping of the evils thus bred in the professional bone, showing themselves in subsequent practice under the code.

The declension from once higher ideas, and from the stricter principles of honor and justice, is conspicuously shown in the growing tendency of medical men to advertise themselves. Men that are thus led by what they would doubtless call an "enlightened self-interest" to seek returns more substantial and marketable than the silent applause of an approving conscience, do not hesitate to whisper in the reportorial ear, through the intermediation of some judicious and obliging friend, the results of certain important performances. And it is a noteworthy fact, that the reports of operations and cures that by this road find their way into the daily prints with the performers' names duly heralded, are invariably of this significant character. Even the suggestion of a contemplated jaunt to London, Hong-Kong, or the moon, may, in the hands of an expert, be the means of exciting a very considerable public interest. In some instances it requires as many as a dozen notices, published in a score of newspapers at convenient intervals, to satisfy the public appetite for knowledge of this kind.

In conducting enterprises of this character it is not wise, of course, to expose oneself anywhere "below the level of a vulgar rectitude." However, the risk is inconsiderable, for in advertising, as in other forms of human enterprise, practice tends to a perfection of method; and it not infrequently happens that the well-known objections of the code to advertising are obviated by a resort to methods so adroit as to be absolutely illusive. Of this class is the clever copyist, the compiler of useless and confusing books that distract the reader's mind, impose on his memory, and waste his time. Of this class, too, are the men that overload periodical literature with the reports of cases that every physician treats familiarly, for the ostensible purpose of introducing a remedy already in universal use, or to warn the profession against the longer employment of a treatment that has been, by earlier and common consent, relegated to eternal limbo.

Another signal and comprehensive defect in the ethical character of the medical men of the day manifests itself in a glaring and inconsistent behavior in respect of proprietary medicines and formulas. There is hardly an item in the long list of multifarious traffic carried on by the proprietary man that is not used by, and advertised over the signatures of men whose opinions are somewhere treated with deference and consideration. A new humbuggery in the way of a temporary hanging-apparatus, corn-solvent, liver-restorer, or shin-plaster, has only to spring up in the night to find some medical man up and dressed and ready to serve it. Indeed, it looks very much as though the medical man of the future might be compelled by the exigencies of trade to advertise his fractional existence in the open markets of the world, to be inspected and purchased by the highest qualified bidder of a patent medicine, or else to eat his heart out in some obscure, unknown corner.

But this, it may be admitted, is an extreme view of the case. In one of two or three ways medical ethics of the higher sort are likely to be victorious over medical ethics of the lower sort, but the victory will be a costly one both to the conquerors and to the conquered.

In the first place, the fact that medicine is overridden and disfigured by an indirect, surreptitious, and grasping commercialism is too apparent to be hidden by any amount of sophistry and artificial logic. The main features of the question will, we may reasonably hope, be clearly discussed, patiently analyzed, and their fatal tendencies plainly stated. The effects of such treatment will probably be to bring the "saving remnant," the generous spirits, brave wills and clear heads in medicine, into a closer bond of union for defensive and offensive warfare against trade practices and relations. Secondly, the State government may be forced by an educated public sentiment to place medical education under the ægis of law. Or, thirdly, the evils may be destined to remedy themselves; for, *what will there be left in medicine to tempt the avariciousness of trade when its good character is destroyed?*

No one would attempt to deny the right of medicine to rejoice in its brilliant activities and achievements; but how ridiculous is the cant about its model general government! And what a paralyzing, what a drivelling conceit to claim, in the face of disproving facts that the subtlest influence of distorting prejudice cannot hide, that either the spirit or the letter of the code are observed in practice. The prevailing cry of Ethics, ethics! is like that other cry of "Peace, peace!" heard in the lamentations of Jeremiah, "when there was no peace."

1637 ARCH STREET

ORIGINAL LECTURE.

THE PREVAILING EPIDEMIC OF INFLUENZA.

A Clinical Lecture delivered at the Pennsylvania Hospital, Philadelphia, December 19, 1891.

BY PROFESSOR J. M. DA COSTA, M.D., LL.D.

GENTLEMEN: This morning I shall show you some illustrations of influenza, exhibiting its different types, and make some remarks upon the peculiar features o

the epidemic of influenza, or catarrhal fever, through which we are now passing.

I shall first take up the case of Captain J. F., a hearty man in appearance, well built and strong, who came from his vessel to the hospital on the 7th of December. He was then sweating profusely, had moderate fever, and suffered with great shortness of breathing. His pulse was 108; temperature 101°; the respirations were 26 to the minute; but notwithstanding the fact that the respirations were only 26, he complained of much difficulty in breathing. In the further progress of the case, it was noticed that the face was flushed, and the dyspnea was attended by pain in the chest and in the back. With this were associated physical signs which did not indicate a pneumonic condition. In truth, upon examination, we found nothing in the chest, except here and there a considerable number of dry râles, with harsh respiration; there was no tubular breathing, and no signs of consolidation anywhere existed; though slight impairment of resonance at the lower part of the right chest pointed to some pulmonary congestion at this place. The expectoration was not blood-colored, and rather free. There was no sore-throat, but a very decided degree of laryngitis was present, as shown by great huskiness and almost complete loss of voice; absolute aphonia was never noticed. The urine was found to contain albumin in small amount and a few hyaline casts.

Here, at once, we meet with some points of very considerable interest. Not to detain you with too much detail, I will only ask you to notice, by this chart, that his temperature steadily but gradually declined, so that by the 13th it was slightly subnormal, and on the 14th it had found its way back to normal; afterward, for a few days, it was again subnormal, though it is back to normal to-day. The albumin and the hyaline casts have disappeared from the urine. The pain in the back and limbs, and the headache, which were early symptoms, left him before long. We may now consider the patient as absolutely convalescent. Before dismissing the case, however, I will examine his heart for you. I notice that the first sound is heard, though it is weak in relation to the size of this man; nor is the pulse strong, though you see what a heavily built man he is. The murmur that accompanied the first sound of the heart, early in the case, has disappeared. This is a point to which I especially call your attention.

The treatment consisted in chloride of ammonium for the bronchial affection; quinine, twelve grains daily, as a general tonic, which has lately been discontinued; the chloride of ammonium being stopped also. The tongue still remains slightly coated. The only treatment now needed will be a tonic; we shall give him one-fiftieth of a grain of strychnine, with two grains of quinine, three times a day. The cough is very slight, but you perceive that when the man talks, his voice is still hoarse; his catarrhal laryngitis is not entirely cured. For this condition we will use sprays. He has been using a spray of chloride of ammonium dissolved in Dobell's solution. This will be continued, and, in addition, if the laryngeal catarrh last, we shall make local applications to the larynx of zinc sulphate, ten grains to the ounce.

We shall now take up Case II. This patient is a Russian, aged about thirty-five. A definite history is difficult to obtain, from our inability to communicate with him. So far as we can make out, he had a previous attack in Russia; he had been ill this time for eight days before coming into the hospital, suffering with headache, loss of appetite, and constipation. The headache was the prominent symptom, and in a day or two after, he had a slight cough. On admission, his temperature was 100°, pulse 82; the respirations were 32; he had a coated tongue. He had no apparent disorder of heart or lungs, though subsequently a few râles were perceptible, scattered through the chest. After he had been in the hospital for a few days he became almost absolutely deaf. He had some sore-throat, but no loss of voice; redness and relaxation were seen in the throat, but no exudation. He had considerable pain in the back and in the abdomen. No albumin was found in the urine, and no tube-casts.

Now, in this case we have a peculiarity to note, to which I shall presently call your attention as being one of the striking features of the present epidemic. This man, who has been for ten days in the hospital, still has elevation of temperature. As you see upon the chart, the temperature ranges near 100°; the highest point attained under our observation was early in the case—101⅖°. It is fair to infer that he has passed with a slightly elevated temperature into the third week of the disease; for the history is that he was, for a week prior to admission, in much the same condition as when he came in. Notice the continued character of the fever, though not a high fever. Notice, also, that the continuous fever has existed with a slightly coated tongue, with poor appetite, with constipation, with languor and fatigue, with headache, but without eruption. Even with the closest scrutiny, we have never been able to detect any eruption of any kind upon his skin. Case II, then, is marked by continuous fever, though the fever is slight; marked by aural symptoms with headache, and also marked by the length of the case and by much general discomfort and prostration.

Case III will illustrate some further points that will serve to indicate the peculiar types of the prevailing epidemic. This patient has also had an illness of two weeks' duration; he is an elderly man, sixty-seven years of age, of good family history, and of good private history. He never had a previous attack; he was taken ill two weeks ago, with pain across the chest and in the abdomen; but no headache. He says that he was very much prostrated at first, and the resident physician adds that, from what he was able to learn, he was almost unconscious. He was admitted with a temperature of 100⅘°, pulse of 100, and respirations 28. There were no very marked catarrhal symptoms, no laryngeal symptoms, no sore-throat, no sweating. He was still complaining of pains in his chest and in the abdomen. The urine was normal. He was placed upon salicylate of cinchonidia, sixteen grains daily, in divided doses, and Dover's powder in small doses at night. He was also given tablespoonful doses of solution of acetate of ammonium every two hours. Under this treatment he has very much improved; the pains are almost gone, and he is less prostrated. As an additional feature in this case, it is to be noticed that he only had an elevated temperature for a few days. Upon auscultation, a few friction-sounds were detected in the left chest, toward the base; there was also some

harshness of respiration, in other words, a slight pleurisy with bronchial catarrh at this point. Now, the breathing there is feeble, but no friction-sound is to be perceived. He also is convalescent.

Before proceeding to a discussion of these cases, let me show one other, which I can briefly dismiss, but which I bring before you in order to make my review of this epidemic more complete.

Case IV is another Russian, twenty-one years of age, also suffering with fever, headache, and with congestion of the lungs more marked than in the other cases, but with no pneumonia. He had, however, and this is particularly why I have brought him in, what neither of the other cases have shown, a distinctly high temperature. Now, I will not go into this case further than to state that the temperature reached $104\frac{3}{5}°$, with a pulse of 100, and respirations 28. But notice this curious temperature-chart. The temperature sank decidedly the day after admission. As we ascertained, the man had only been ill for three days prior to admission; the malady not having begun with a definite chill, but with a good deal of pain in the back and abdomen, also in the chest and in the legs. The temperature, I say, which on admission was so high, was the next morning 102°; it then gradually rose from that again, until on the third evening, forty-eight hours after admission, it had reached $103\frac{2}{5}°$. Then, as you see, comes a long line downward, looking like a crisis, and the temperature drops from $103\frac{2}{5}°$ to $98\frac{3}{5}°$—almost like a malarial attack. After this break no rise occurs of more than half a degree. This case was associated with marked sweating, and I will add that sweating still persists to a slight degree. The physical signs in the chest were never marked; there was some congestion of the lungs, and impaired resonance and many râles in the chest, but no consolidation of the lung.

With these four cases before you—although I could show you a great many more from the ward—let us proceed to consider the striking features of the disease now epidemic that they represent. Let us look at these cases as representing types of the malady; though, of course, what I shall tell you is not based solely on these four cases, but on a very large number that I have seen during the last two or three weeks, here and elsewhere; for in truth, the malady is very widely prevalent.

First, as regards the fever, two extremes are met with: the first is represeated by Case IV, the other by Case II. They are types absolutely dissimilar. Case IV, which you just saw, is marked by extraordinarily high temperature, rapidly declining, rapidly rising again to nearly the same point; then a marked fall and a termination by crisis; the whole occupying about one week. In Case II a continuous fever existed, which was so like typhoid that the question constantly arose, Is it typhoid? These are the two extremes. You will ask me, which of these two extremes is more common in the present epidemic. I answer, Neither. The most common form of the fever process that characterizes this influenza, or catarrhal fever, now epidemic, is represented neither by Case IV nor by Case II, but rather by the case you saw in which the fever was not very high or very prolonged. The temperature is not, as a rule, elevated. The case you saw with high temperature is indeed even more exceptional than the one with continued fever and comparatively low temperature. It ought also to be added that the high temperatures are apt to decline gradually and the case does not generally terminate by crisis, as in Case IV, so that this does not at all represent the average case, which is marked by a temperature without much variation and subsides by lysis rather than by crisis. Before dismissing the very interesting subject of the fever-temperature, let me call your attention to several points associated with it. In the first place, I do not remember in previous epidemics to have seen so many cases, like Case II, of continued fever-temperature, looking very much like typhoid. I could in truth repeat the histories of a number of cases observed during the last few weeks, with headache, with coated tongue, and with low fever, which belonged to the epidemic malady, but without red spots, with constipation, and with nothing of true typhoid about them.

Let me also call your attention to the fact that few of the patients have a distinct initial chill, though chilly sensations at the onset are common. I must also mention a peculiarity of the circulation. It consists in an extraordinary lowering of the pulse late in the disease, though sometimes seen before; a lowering that may show you a pulse in the fifties, most misleading and attributed perhaps to remedies, especially if digitalis has been given, but which belongs to the disease, and not to the administration of any medicine.

Albumin in the urine, with casts, hyaline and epithelial, is observed to be quite a common occurrence. This, too, is rather peculiar. It shows that there is a tendency to renal complication in the present epidemic, which is worthy of more notice than I can give to it this morning. I will only add that I have not found this albuminuria to be persistent. Retention of urine is not rare, especially in elderly persons.

On looking at the catarrhal symptoms, we are struck by the fact that there is infinitely more laryngeal catarrh than is common in the history of epidemic influenza. In the case of the ship-captain whom you saw first, he has not yet recovered his voice; and I have a lady under observation in whom the whole disease after the first few days expended itself on the larynx, and who still has aphonia. I may also add that a kind of aural catarrh is also encountered, attended by pain, deafness, and noises in the ears. These types are, to a certain degree, characteristic of the present epidemic; and we also encounter opthalmias preceding or attending the laryngeal and bronchial catarrh, with its harassing and obstinate cough. A remarkable fact to be noticed is that it is not unusual for the malady to subside with coryza, which may or may not have been present at first, or have been present and disappeared. Again, the catarrhal symptoms transfer themselves readily from one organ to the other. Great disgust for food, coated tongue, anorexia, are common; but intestinal catarrh and looseness of bowels I have not seen as often as in some previous epidemics.

Now, when we come to the other symptoms—the pains, the nervous phenomena, the sweating, the prostration—the present epidemic does not differ from other epidemics, except that, perhaps, pains in the bones and in the chest, and the sweating, are less prominent than in other epidemics, especially the one that occurred two years ago; but the nervous phenomena, the delirium, the headache, and other symptoms simulating

cerebro-spinal fever are fortunately much less common and grave, while the catarrhal form, as already stated, is more common. Yet there are cases showing the nervous system much implicated. I may refer to one I have seen in consultation, in which an old lady lay in a state of stupor on the tenth day, and was aroused with the greatest difficulty, only to immediately relapse into unconsciousness. No albumin was found in the urine, although it was repeatedly tested. There were no signs of delirium, merely absolute apathy and stupor. When spoken to, she replied, but immediately relapsed into stupor. She is a hearty old woman and had previously had good health, although changes in the arteries incident to her age had begun to take place. Great depression and despondency are seen in many cases, especially in old people, whose nervous systems are more depressed by the poison than those of the young. In many of these instances, after the febrile stage is over, the temperature is also depressed, and remains so for a considerable period. The most singular nervous disturbance I have encountered was in an old lady seen very recently with Dr. Allen, in whom the disorder was ushered in by a violent convulsion, the first she had had in her life. Her arteries were very rigid ; the kidneys were sound.

One of the most curious features of the present epidemic is the prevalence of cases that at first glance seem mild cases of rheumatic fever. The joints, especially the wrist-joints, are extremely painful, only very slightly swollen, and doubtfully redder than normal; with the pain, which is great, there is some tenderness. We have two cases of the kind now in the hospital. One had, on admission, the injected eye, the catarrhal symptoms of influenza, with a temperature of 103°, that suddenly dropped to between 99° and 100°. There was a short cardiac murmur, which is disappearing. With the subsidence of the malady the pulse has gone down to 52. The use of the salicylates and quinine proved very beneficial, particularly to the joint pains. In the second, the fever was more continued, though slight; the catarrhal symptoms were marked, the joints very painful. There was no murmur. But under any circumstance the murmur cannot be accepted as disproving the nature of the case, and determining in favor of acute articular rheumatism; for I have already shown you that cardiac murmurs may be present in influenza. It is an interesting question whether these joint cases are due to the poison affecting the spinal centers. The endocardial murmurs mentioned are not, I think, the result of an endocarditis, but are of a functional kind.

The bronchial catarrhs form a very prominent part of the symptoms in the present epidemic, and are very obstinate. There are also many cases of congestion of the lungs, and of deep congestion more manifest in parts, forming a kind of bastard pneumonia. Yet true consolidation is also encountered. At the onset of the epidemic real pneumonia was rare. But now it is not so, and we are seeing the full proportion of this dreaded complication. Pleurisy, too, is encountered.

In this epidemic, as in others, we find influenza intercurrent. I am thus seeing at present, with an eminent colleague, a case in which at the beginning of the fourth week of typhoid fever the temperature suddenly went up to over 104°, catarrhal symptoms and loss of voice showed themselves, and the epidemic poison became most manifest.

I have now given you an outline of the disorder as we encounter it in its varied phases, and have compared, as far as here possible, the symptoms with those of previous epidemics. You will naturally want to be informed if the earnest researches of the last few years, during which influenza has been in many countries so prevalent, has given us any clearer knowledge of its cause. Unfortunately not. The malady is generally assumed to be due to a microbe. But this is but a probable and intelligent assumption; for the microbe has not been found.

The great majority of the cases are light. Yet this epidemic is like all preceding ones, swelling frightfully the list of mortality. The old and the infirm, when attacked, speedily succumb. It destroys the weakly, and extinguishes the vital spark wherever it is flickering. Indeed, people no longer talk of the malady, as a few years since, with the jaunty air of amusement. It is beginning to be realized that a widespread epidemic of influenza is a national calamity.

In conclusion, I wish to say a few words about treatment. Besides advising, of course, what is self-evident, that local treatment must be instituted to relieve the laryngeal and aural catarrh, by the usual means, I ask you to watch the chest most closely. We have dry-cupped some of our patients with most evident relief and benefit. Has any specific been found? is there any treatment that the large experience of the last few years has demonstrated to be akin to specific? I wish I could so state. You know that we live in an age of thought about microbes and microbe-hunting, and it is almost inevitable that our therapeutics should be tinged with the theory of a germ to be destroyed; indeed, you can hardly take up a medical journal without seeing a number of remedies advocated that are to affect the supposed germ. Some of them may do good, possibly, even probably; yet I would not advise you, in treating influenza, to rely upon any remedy solely because it is a microbe-destroyer.

But there is no doubt that our tried friend, quinine, is of value; whether it is because it destroys microbes or not, I cannot say. However, in some cases, when there is a good deal of headache and pain through the body, we substitute the salts of cinchonidia, selecting the salicylate, given in daily doses of from 12 to 18 grains. We must also keep up the action of the skin, and if there be not much sweating, I am in the habit of using the solution of acetate of ammonium with small doses of morphine. In all cases, too, the strength must be looked after, and elderly persons generally require stimulants.

In instances of much pain in the head and aching in the bones and muscles, Dover's powder in small doses is beneficial, and it or codeine also helps the irritating cough. In others, we gave antipyrin or phenacetin, grs. iij, with quinine gr. i, in powder or capsule, every two or three hours, until the pain is strikingly modified. One of my patients has become so attached to this prescription that he carries the capsules with him constantly to have them on hand, for he is thus sure of relief; and the combination also relieves the pains that may continue after the influenza attack has passed away. But phenacetin

and antipyrin are powerful agents, and are only to be employed under the observation of the physician. These are strong drugs, in their way as effective as strychnine, opium, or arsenic, and should not be used except under medical direction.

I will conclude this summary of treatment with the advice to you to look after the heart even in convalescence, and for the cardiac weakness, or the slow action which may persist, you will find no remedy equal to strychnine.

Again, impress upon everyone this rule: Give up early, do not go out too soon. The community that learns this quickest will have learned to avoid much suffering and disaster.

CLINICAL MEMORANDA.

CASE OF ANTE-PARTUM HEMORRHAGE IN WHICH THE PLACENTA WAS NORMALLY SITUATED.

BY F. M. GREENE, M.D.,
OF GREEN DALE, KENTUCKY.

MRS. M., a multipara, was just entering upon her ninth month of gestation, when she slipped upon a piece of ice, partially fell, and in recovering the erect position she felt a sharp, lancinating pain in the left side near the fundus of the uterus. She kept upon her feet for two hours without discomfort, but at 1 o'clock she suddenly felt weak and faint, and while attempting to get into bed syncope came on and she fell across the bed. She remained unconscious for some time, there being no one present save a little son, who could render no assistance. At 2.30 o'clock her husband came in and found her lying in this position and thoroughly chilled. He assisted her to bed, placed hot irons to the extremities, gave her spiritus frumenti, one ounce, and sent for a female assistant.

On the arrival of the latter the patient informed her that her "waters had broken," which, on examination, proved to be blood, and several clots were discovered upon her clothing and bed. I was sent for, and arrived at 4 P.M., finding the patient much agitated and alarmed, the face and lips blanched. She complained of no pain; the pulse was 100, weak and compressible. Examination revealed a large clot in the vagina, which was removed. Hemorrhage had ceased. Palpation showed the uterus moderately contracted, with a slight swelling or enlargement near the fundus on the left side, and which was painful on pressure. The condition of the fetal circulation could not be determined, as the placental souffle could not be heard. The os was dilated to the size of a dollar, the membranes slightly tense and protruding, the vertex presenting. A broad bandage was drawn with moderate tightness around the abdomen and secured.

The patient now rested for an hour and a half. There was little or no hemorrhage, but there was a complaint of great fulness, with dull pain over the enlargement at the left side. Having no Barnes dilators, I proceeded as follows: The patient was placed in position for podalic version, the bandage was loosened, and with the palms of both hands, at first moderate and then firm pressure was made over the uterus. This was continued during three distinct contractions, when the assistant took my place and continued the pressure. The os was now found almost fully dilated, and the membranes were ruptured. During the next contraction the vertex was found distending the perineum. The patient was thus saved from the shock and hemorrhage that would necessarily have followed version. As the head emerged the cord was found coiled once around the neck. The cord was released, but was pulseless and flaccid. A single contraction now completed the second stage.

The infant was placed in a warm bath, and after five minutes no further attempts were made at resuscitation.

The assistant had in the meantime kept up constant pressure, and there had been considerable discharge of blood during the passage of the fetus. The placenta was now found blocking the os, presenting by its maternal surface, and partly within the vagina. I now employed Credé's mode of expression of the placenta. There immediately followed a large clot, of placental shape and very firm. The pressure was now continued for one hour by the assistant, when the bandage was readjusted, half a dram of fluid extract of ergot given, and the patient put to bed. Convalescence was normal.

The constitutional symptoms from loss of blood were greater than the quantity discovered on first examination would justify, and in this respect the case resembled one of concealed hemorrhage. The clot probably caused the unusual swelling over the placental site, and was composed both of fetal and maternal blood. The blood, finding its way between the membranes and walls of the uterus, escaped externally, causing the protracted syncope, during which the child perished. Just previously the mother had felt active fetal movements; afterward none at all.

Although the indications were to bring about immediate delivery, the os was not sufficiently dilated, and hence the delay. Finally, as an excitor of uterine action, pressure was chosen instead of ergot or other ecbolic, and contractions were brought about sooner than could have been done by the latter; beside, pressure has the advantage of being completely under the control of the accoucheur.

FRACTURE OF THE NECK OF THE RADIUS AND BACKWARD DISLOCATION OF THE ULNA.

BY C. G. DARLING, M.D.,
OF ANN ARBOR, MICH.

MR. M., a moulder, thirty-five years of age, short and muscular, in wrestling put out his left hand to save himself in falling. There was a snap as the hand touched the floor, then the forearm seemed to turn backward on the arm.

This in substance is the patient's description of the accident twenty minutes after it happened. The injury seemed to be confined to the elbow, which was not much swollen and was partially flexed. The olecranon process projected far backward and above the line of the condyles of the humerus, while the radius seemed to lie

wholly anteriorly to the humerus. There was free lateral motion, so that the forearm, when not supported, would swing from side to side. The least movement caused intense pain, and as nothing was to be gained by prolonged examination, I at once attempted reduction. This proved not to be difficult, for the head of the ulna slipped readily back into place.

Slight rotation at the wrist now produced crepitus, and there was still some deformity near the elbow-joint. The head of the radius was found in its proper place, but half an inch below there was a fracture that seemed oblique, with the short side of the upper fragment above, while the upper end of the lower fragment was drawn upward.

The fracture was easily reduced, but a proper position of the fragments could not be maintained with the elbow at a right angle. After several unsuccessful attempts to keep the fragments in place, the arm was placed at an obtuse angle—nearly straight. In this position the lower fragment was drawn against the upper by the action of the biceps muscle. Here it was quite firmly held, and dressed with an anterior angular splint and a bandage firmly applied.

If we form an opinion from the number of reported cases, fracture of the neck of the radius must be exceedingly rare. Packard ventures the statement that he knows of no instance in which the neck of the radius was broken by itself. Hamilton says that, uncomplicated, it is exceedingly rare; that he knows of but one anatomical specimen of this fracture. In his work on *Fractures and Dislocations*, he reports three cases regarded by other physicians as fracture of the neck of the radius. Some time after repair had taken place these persons were brought to him for treatment. He states that dislocation of the ulna may be complicated by fracture of the radius, but gives no reference or report of cases. Gant, in his *System of Surgery*, gives one illustration of fracture through the neck of the radius—the Mütter specimen that Hamilton figures as the only one recorded. Dr. Fowler, in *Holmes's System of Surgery*, says that authors differ considerably in their estimates of the comparative frequency of fracture of the neck of the radius, chiefly as a result of the difficulty of making an absolutely certain diagnosis. Stimson, in his complete work on *Fractures and Dislocations*, which covers nearly all references to be found on fractures of the head and neck of the radius, mentions one doubtful case of fracture of the neck of the radius, complicated by backward dislocation of the ulna. He says our knowledge of fractures of the head and neck of the radius is drawn from about a dozen specimens and two or three doubtful cases. Recently he has added to the list one that occurred in his own practice. Dr. Nancrede informs me of an unreported case of fracture of the head of the radius with backwad dislocation of the ulna occurring in his practice.

The case that I have reported was treated as an ordinary fracture near a joint. The partially flexed position was maintained for six weeks; then I began passive movement, and twelve weeks from the date of injury all dressings were removed. It is now five months since the injury occurred; the arm can be extended almost to the normal position, and can be so much flexed that the hand can be brought to the face. Supination and pronation are limited, but are well performed. The angle naturally existing at the elbow in extension with supination is greater in the injured arm, showing that the radius is shortened.

What is the evidence of fracture of the neck of the radius? Crepitus could be produced when the elbow and head of the radius were fixed. Marked deformity was shown when the elbow was flexed and the biceps was contracted, the head of the radius still remaining in place, while the upper end of the lower fragment was tilted upward. There was also slight shortening of the radius after union had taken place.

How may the injury be explained? An examination of the radius of an adult shows a marked angulation at the tuberosity, and also that the neck is the weakest part of the bone. Any great amount of force applied to the lower end of the radius and continued through the contraction of a powerful biceps with the arm in a partially flexed position would cause a yielding at the neck. My patient, in falling, probably threw most of his body-weight on the radial side of the hand, the elbow being slightly flexed; at this moment the biceps contracted, and the result was a fracture. A large part of the support to the elbow-joint was now lost—the radius and the biceps muscle—and the forearm turned backward far enough to produce a dislocation of the ulna.

POLYURIA IN PHTHISIS CONTROLLED BY FULL DOSES OF ERGOT.

BY WM. S. BARKER, M.D.,
FORMERLY ASSISTANT PHYSICIAN AT THE ST. LOUIS CITY HOSPITAL, ST. LOUIS, MO.

H. E., a mulatto, thirty-one years of age, entered the City Hospital November 7th, with well-marked symptoms of pulmonary tuberculosis. No tuberculous trouble could be located elsewhere than in the lungs. Whether the symptom about to be described was due to tuberculous deposit in the kidney or in the neighborhood of the controlling cerebral centers in the fourth ventricle could not be satisfactorily determined. During the preceding October the patient had for the first time been somewhat annoyed by frequent, copious, and persistent micturition. Examination of the urine gave the following result: Acid reaction; specific gravity 1004; no albumin, sugar, or casts. But the quantity of urine voided was very considerable, as the following record will show:

	C.c.	Pints.
Nov. 14–15	5,000	10.0
" 15–16	10,400	20 8
" 16–17	8,200	16.4
" 17–18	10,600	21.2
" 18–19	9,100	18.2
" 19–20	7,200	14.4
" 20–21	6,000	12.0
" 21–22	4,400	8.8
" 22–23	2,400	4.8

The marked and steady decrease of urinary excretion after the 19th was due to the administration of rather large doses of fluid extract of ergot. One c.c. doses were given frequently, about 8–10 c.c. being taken daily. The quantity of urine at once began to diminish, and did so steadily each day, declining from 10 600 c.c. to

2400 c.c. per day, at which latter figure it remained until the dose of ergot was discontinued or was made much smaller, when a rapid rise in the quantity of urine took place. This was again brought well under control by increased doses of ergot. The patient succumbed to his pulmonary affection in a few months. Polyuria existed until shortly before death. The autopsy revealed only pulmonary tuberculosis.

MEDICAL PROGRESS.

Phthisis and Tuberculosis Pulmonum.—In support of the view of the non-identity of phthisis and pulmonary tuberculosis, LANGERHANS (*Berliner klin. Wochenschr.*, No. 42, 1891, p. 1034) has reported a case in which tubercle-bacilli were found in the sputum during life while phthisis was not found after death, and a second case in which phthisis was found after death while no tubercle-bacilli could be found in the tissues or secretions. The first case was in a tailor, sixty-eight years old, who, for two years, had complained of cough of progressively increasing intensity. A week before death, a severe chill occurred, followed by decided dyspnea. The sputum was partly purulent and partly rusty, and contained both tubercle-bacilli and diplococci. At the autopsy fibrinous pneumonia of the upper lobe and of the lower portion of the lower lobe of the right lung, with edema, was found. At the apex there was some slate-colored induration and cicatrization, and a number of light-gray, submiliary nodules. The bronchi were dilated and contained purulent secretion. No ulceration could be detected and no unequivocal tubercles were found. The middle lobe of the right lung was partially atelectatic. The upper lobe was small, shrunken, and dense. On section, slate-colored lines, crossed by dilated bronchi, were seen. At the apex were a number of transparent, light-gray, submiliary nodules. The purulent secretion contained many tubercle-bacilli.

The second case was one of myelitis in a man, fifty-four years old, who presented cough, shortness of breath, moist râles, and blowing breathing. When the autopsy was made, fibrinous pneumonia of the lower portion of the upper lobe and of the adjacent portion of the lower lobe of the left lung, and of irregular distribution in the right lung, was found. In the airless portion of the upper lobe the bronchi were dilated and contained purulent secretion and thickened, caseous masses; the mucous membrane was in places ulcerated. The corresponding pulmonary structure was partly atelectatic, partly hepatized. A large bronchus of the upper lobe was compressed by a tumor as large as a walnut and its lumen obliterated. Other nodules found in the mediastinum proved to be round-celled sarcomata. Tubercle-bacilli were carefully sought for, but none were found.

Two Cases of Traumatic Rupture of the Intestine Successfully Treated by Laparotomy.—JAHODA (*Wiener klin. Wochenschr.*, No. 45, 1891, p. 837) has recorded two cases of traumatic rupture of the intestine in which, in the one eighty hours and in the other twenty-five hours after the accident, laparotomy was performed, with subsequent recovery. The one case was that of a previously healthy man, forty-four years old, who was struck in the abdomen by a wagon. Consciousness was lost. On its return there was intense abdominal pain, tympanites, hiccough, constipation, and feculent vomiting. The operation occupied fifty minutes. A beginning putrid peritonitis was found. In the small intestine was a rupture about three-quarters of an inch in diameter. The opening was closed by means of six Lembert sutures, the abdominal cavity irrigated with a 1 per cent. solution of salicylic acid, a drainage-tube introduced, and an appropriate dressing applied. The operation was followed by threatening collapse, but reaction set in. The subsequent course of the case was favorable, and the man was dismissed at the end of seven weeks. The second case was that of a woman, twenty-eight years old, who, after having received a blow upon the abdomen, presented pain, nausea, bilious vomiting, retention of urine, and tympanites. The operation occupied ninety minutes. When the abdomen was opened, about three pints of brownish fluid of an inoffensive odor was found in the peritoneal cavity, together with evidences of a fibrinous peritonitis. About three feet from the ileo-cecal valve a rupture about two-fifths an inch in diameter was found in the ileum. The opening was closed by means of ten Lembert sutures, the peritoneal cavity was irrigated with a 1 per cent. solution of salicylic acid, and a graduated suture introduced; no provision was made for drainage. In the course of two months the patient was dismissed in blooming health.

The Utility of Tuberculin in Experimental Tuberculosis of the Eye in Rabbits.—At a meeting of the Society of Physicians of the Charité, DÖNITZ (*Deutsche medicin. Wochenschr.*, No. 47, 1891, p. 1289) reported a series of observations in which, by injections of tuberculin, he had succeeded in saving the eyes of rabbits previously inoculated with tuberculous matter. In the animals thus treated the tuberculous process pursued a more rapidly progressive course than in the untreated animals, but ultimately a point was reached when the process becomes regressive, and if the treatment was continued, in the course of three or four months complete functional recovery finally ensued. His investigations lead Dönitz to conclude that tuberculin is a reliable remedy for experimental tuberculosis of the eye of the rabbit. The activity of this agent becomes evident only after tubercles can be microscopically demonstrated. The first effect of the action of tuberculin is a transient but severe irritation of the eye. With the continued action of tuberculin the irritation of the eye subsides. If profound destructive lesions have not preceded the institution of treatment, the functional efficiency of the eye is restored; otherwise atrophy results. To effect a cure it is necessary that tuberculin be given in progressively increasing doses, and that a persistent and not too slight reaction be maintained.

Antipyrin in the Diarrhea of Children.—ST. PHILIPPE (*Journ. Méd. de Bordeaux*) recommends half-grain doses of antipyrin every two hours for diarrhea in children from one to six months old, grain-doses for children up to one year old, and grain-and-a-half doses for children up to three years old.—*Deutsche medicin. Wochenschr.*, No. 44, 1891.

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PRACTICAL RESULTS OF CHARITY-ABUSE.

THE MEDICAL NEWS of November 22, 1890, contained an article in which the endeavor was made to point out the wrong of indiscriminate charity on the part of hospitals and dispensaries, and to forewarn the profession that the practice was liable to bring about a disastrous revulsion of feeling on the part of the kind-hearted benefactors whose gifts made these institutions and their workings possible. It was argued that the profession owed its younger members some justice and protection; that, putting a premium on pauperism, the custom was often a curse to the recipient; that the charitable public had supposed that it was giving to the needy and not to those able to pay for medical service, and that consequently when the knowledge of the deception should, as it must, finally become well known, deserving charities would be suddenly and savagely checked, and that that medical education dependent upon abundant clinical material would be harmed by withheld subscriptions.

The word of warning fell upon deaf ears. The abuse of medical charity has progressed until, in the rivalry of hospitals for patients, it has become simply ludicrous.

Mark, now, the beginning of the end: The public "Hospital Sunday" subscriptions to the London hospitals this year fell short of the amount given last year by the tremendous sum of $330,000—a fact not to be explained by "hard times," etc., but indubitably explained by the sensible conclusion of sensible men, that there is quite enough real want in the world crying for relief, without encouragement of sham and lying on the part of those able to pay for medical attendance. Those that feel moved to pity by the diseases and suffering of the poor are very liable to have even that praiseworthy sentiment frozen by the thought that their charity is trebly prostituted: 1. To relieve the undeserving that are capable of self-help; 2, by just so much deducted from the due of the needy deserving; and, 3, by the fact that the younger, struggling members of a noble profession are denied their proper *clientèle* by a vicious, unnecessary, and debauching system of encouraged pauperism.

Fast upon the mistaken teachings of many centuries is coming the widespread recognition of the very certain truth, that indiscriminate charity is always indiscriminate wrong. It is a progressive curse, doubling the evil it would halve. But organized and discriminate charity may be made as powerful an agent of good.

Every visiting or resident hospital or dispensary physician that treats patients (except, of course, in emergency cases) without first having made sure by questioning or by some systematic investigation that the patient is needy or deserving, thereby deceives those that originally gave the hospital funds; he puts a premium on pauperism; he encourages a cowardly sort of socialism; he deprives by so much the worthy and needy of their intended and proper care; and, lastly, he degrades the profession to which he belongs.

RESPONSIBILITY AND INSANITY.

SOME time since, in one of our large Eastern cities of the United States, a public officer stole from the people a million or two of dollars. Three well-known physicians of the city were at once quoted in the newspapers in lengthy paragraphs, the essence of their testimony being that the scoundrel was the victim of insidious and progressive cerebral disease, and therefore, of course, irresponsible; the insane asylum, not the prison, was his proper home. This exhibition was a particularly flagrant and outrageous specimen of what is going on about us all the time. Even supposing the contention true (though in

this case it was not true), and supposing that all criminality and crankism are the product of abnormalism of cerebral structure, the publication of the fact in the daily newspaper is wrong: 1, Because such publication brings the medical profession into disrepute—proof of which is patent, but an instance is to follow—and, 2, Because it is wrong for physicians to deliver professional opinions through the agency of the reportorial mind.

The most popular of our American after-dinner orators, in a public speech last week, used these words: "As we have evoluted the theory [of insanity], it threatens to empty our prisons. The old-fashioned way was to lock up people who endangered life or property, or did deeds of violence, for a statutory period; but the new idea sends them to an asylum, to come out in a few months, to the glory of the professional gentlemen who have wrought a wonderful cure, and the terror of the community which is the victim of these experiments."

Now, it is easy to say of this, that it has no more value than the usual post-prandial wit born of champagne bubbles; but a moment's serious reflection will show that this is to shirk responsibility, and hedge the margin of an ugly precipice with rose-bushes. It is idle conceit and partisan bias to neglect the signs of popular mirth mingled with disgust *in re* "the insanity dodge." Doubtless, the bull-in-the-china-shop wrath of Lord Demos has hung and imprisoned many a poor devil that should have had medical treatment instead of punishment. But nowadays there is little danger of that extreme, and very much danger of another the reverse of that. It is brave and often necessary to defy wrong public opinion, but to insult it is something worse than useless, and is apt to be followed by a boomerang effect.

With great travail, scientific medicine is valiantly pawing to get its hinder parts free from the noose of a belated medievalism and the slime of quackery. With slow and labored progress she has risen above the amused contempt of society and literature, and is attaining a position of the highest dignity and honor. There are few ways of undoing this more effective than to encourage lay scorn by an exaggeration of the pathological aspect of criminality. To smudge over or wipe out the delimiting lines of ethical laws, to deny the value, older than the Decalogue and more unerring than instinct, of responsibility, to define sin as disease—all this, were it true, would be impolitic at present. But it has also the excellent misfortune of being in the main untrue, and the shrewd, subtle wisdom of common sense will wink and sneer at the expert testimony vitiated by such unscientific and sorry prejudice.

PALPITATION OF THE HEART.

THE term palpitation is sometimes broadly applied to designate increased force or frequency or perverted rhythm of the action of the heart. It were preferable, however, to restrict the application of the term to the designation of the *subjective* sensation of deranged cardiac action, independently of the character or the cause of the derangement. The action of the heart, as determined by physical examination, may be gravely disturbed, and yet the patient not have the slightest intimation of any abnormality. Here the use of the term palpitation would be manifestly inappropriate. Under ordinary conditions, in health, the individual is totally unconscious of the pulsation of the heart. There may be increased frequency of action both in health (during digestion) and in disease (in febrile conditions), and the patient still be unaware of such pulsation. This surely would not be called palpitation. On the other hand, the individual, under certain conditions, may be alarmed by his sensations when, on auscultation, one is unable to detect any abnormality of cardiac action. This would constitute the simplest type of palpitation. It cannot be denied, however, that in many cases in which abnormal sensations are referred to the heart the action of the organ is deranged. The point that we wish to make is, that palpitation essentially consists in the *sensation*, and not in the physical phenomenon, which is but incidental.

The significance of palpitation, employing the term in the limited sense indicated, is a widely variable one. Of itself the manifestation affords but little aid in prognosis; it is of no diagnostic significance whatever, except it be by directing attention to the heart; it gives no indication for treatment that is not more unequivocally given by other symptoms. The smallest number of those that complain of palpitation have disease of the heart; the largest number are dyspeptics; while the intensity of suffering that may be induced in a hypochondriac is sufficient to give rise to a condition of pseudo-angina. In these, of course, the most brilliant results are to be obtained by careful attention to the secretions, to the digestion, to the

food, and to the mode of life. Even in cases of organic disease of the heart, a distressing symptom may be relieved by the removal of mechanical conditions dependent upon abdominal distention and gastric dilatation, or of irritating influences acting upon the peripheral terminations of the pneumogastric nerve. Among other common causes of palpitation of the heart, other than organic disease, are the excessive use of tobacco, of tea, of coffee, of alcohol, of certain drugs, hunger, loss of sleep, fatigue, exhaustion, sexual excesses, hysteria, and great muscular effort. The manifestation disappears with the removal of its cause.

THE INDIVIDUALITY OF DISEASE.

From text-books and didactic lectures the medical student learns the typical and characteristic symptoms of various affections, and comes to imagine that every disease has clearly-bounded limitations and easily-defined features. It seems to him easy to classify all pathologic conditions, and it also seems that given cases must by their own gravitation settle into distinct groups, and each become recognizable as this or that specific disease. But active practice soon dissipates all such agreeable anticipations. Despite systematizations and cataloguings and scientific generalizations, essential biologic facts refuse such harnessings. There are none of these facts that more intimately come under the spontaneous play of living forces than those of disease; and, if conscientious, the young practitioner soon finds himself at odds with his teachings and preconceptions. Actual diseases do not submit to being jammed into definite classes. There are few or no typical, uncomplicated cases of disease. Complications and possible complications blur all outlines, and every case becomes an individual study, that must be weighed with a quick intelligence, and met with answering adaptations to ever-varying and ever-variant abnormalism of function. Thus the keen mind learns to unlearn rules and systematic classifications, and seeks to gain a subtle intuition and vivid insight into vital conditions and morbid processes. An experienced physician will reach conclusions by means of a hundred little observations and "short cuts" that he will find impossible to explain or to teach to another. Some men have a positive genius of insight into living pathological processes. Nothing, indeed, can take the place of first-hand intelligence. Clinical work, not text-book or quizzing drill, must be the test of medical capacity. There can be no question that in medical colleges there has been an over-emphasis of the value of didactic instruction, and that greater attention must henceforth be given to practical bed-side work. It is a wretched shame that thousands of young physicians have been sent forth to their life-work without personal experience in the recognition and treatment of the many forms of inter-blended, masked, and complicated diseases that are present in almost every sick person.

THE RATIONAL SIGNS OF DISEASE.

To those phenomena that are the direct results of derangement of function may be restricted the designation "rational signs"—in contradistinction to the physical signs, which are developed as the result of conditions purely physical. The distinction is a vital one and of the greatest importance to the clinician. The rational signs represent the functional, the physical signs the structural, results of disease.

In a general way the physical signs make the pathological diagnosis; the rational signs the clinical diagnosis. The rational signs also afford important indications in treatment, and thus aid in the therapeutic diagnosis. The existence of a valvular lesion of the heart, as determined by physical examination, of itself by no means indicates the institution of treatment. This last must be decided by the evidences of disturbance of the functional equilibrium (in the case of the heart described as ruptured compensation): the palpitation, the dyspnea, the dropsy, the weakness, the coldness—in a word, the rational signs.

Under certain circumstances the establishment of the diagnosis essentially depends upon the rational signs. Disease of the muscular structure of the heart may give rise to no obvious physical signs; a deep-seated abscess of the liver may not be accessible to palpation and percussion; so-called central pneumonia may elude the most careful and the most expert physical exploration; and the same may be said of diaphragmatic pleurisy. Most diagnoses by exclusion are based upon the rational signs, which thus may be said to represent an empirical mode of diagnosis.

REVIEWS.

A Text-book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S., Professor of Physiology in the University of Cambridge, and Fellow of Trinity College, Cambridge. Fourth American, from the Fifth English edition, thoroughly revised, with notes, additions, and two hundred and eighty-two illustrations. Philadelphia: Lea Brothers & Co., 1891.

Foster's Text-book of Physiology is so well known that a new edition needs but little comment, except to call attention to its excellences and to commend it to all readers; for practitioners of medicine as well as students of physiology will here obtain in a readable form an admirable account of the present state of physiological science. When the merits of this work are considered it is not at all remarkable that it should have passed through four editions and that a fifth should be called for in the space of twelve years. With each successive edition the author has not only incorporated a large number of new and apparently well-established facts, but he has rewritten many of the paragraphs, so that the work represents the present status of many physiological problems. Should anyone desire to obtain an accurate knowledge of physiological processes, as well as to be informed as to the direction in which modern investigation is tending, no better work can be studied than this of Professor Foster. It is unencumbered with details of experiments, with descriptions of elaborate forms of apparatus, with extensive tables of unimportant facts—all of which, however valuable and instructive to the investigator in physiological science, are unnecessary to a clear presentation of the essential ideas for the general student of medicine. All phases of each vital process are stated in a concise and definite manner, and when one rises from a study of these various chapters it is with the conviction that physiology is a real, living science closely related to all problems of clinical medicine.

This fourth American edition contains, as did the previous editions, some gross anatomical facts which, as stated in the preface, are intended to adapt it to the needs of the American student. It is doubtful, however, if the student who is ignorant of these facts is in a proper mental condition to appreciate Professor Foster's expositions; to the advanced student and practitioner they are unnecessary. All the histological features required for an intellectual comprehension of any process were added by the author himself. The work is also profusely illustrated. The publishers deserve the thanks of the profession for a reprint of this valuable book.

Fifth Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted to the Governor December 2, 1889. 8vo., pp. 734. Harrisburg: Edwin K. Myers, State Printer, 1891.

The fifth annual report of the State Board of Health of Pennsylvania for the year 1889 is a volume of over 700 pages, well printed on good paper, and is altogether a creditable specimen of book-making. It contains a great deal of matter of special interest to the student of public health and hygiene, and at the same time much that has little value outside the official circle represented by the Board. But as it is a record of the transactions of the Board required to be made to the Governor of the Commonwealth, allowance may be made for a somewhat wearisome detail of its proceedings.

As might be expected, there is a very unequal value attaching to the various reports and papers. If possible to select such documents as have a special bearing upon important questions of public health—such, for example, as data relating to etiology of diseases of the infective class, the relation of the pollution of drinking-water to outbreaks of disease, the effects of good sanitary administration, or the reverse, upon the health of towns, etc.—to the exclusion of the description of nuisances of a minor character, it would improve the quality of the volume and enhance its value. This suggestion is not made in any spirit of fault-finding, but in the interest of the busy reader who is dismayed by the difficulties of even scanning the limitless and voluminous publications of the present day.

The scope of the work of the Board during the year may be learned by the perusal of Dr. Lee's admirable prefatory report. This, with the minutes, constitutes the first part. The second part is taken up with appendices embracing reports of committees and of inspection, annual reports of cities and towns, reports of conferences, of the flood at Johnstown and other districts, and quarantine, epidemics, and special sources of disease. The remaining appendices contain a report of the State Pharmaceutical Examining Board, meteorological observations, and other less important items.

Interest in the great catastrophe that befell Johnstown and other districts of the State is revived by the graphic description of the results of that unprecedented visitation of flood. Among the many lessons taught by that experience is the value of an organization like the State Board of Health, which by energy, promptness, and administrative ability, distinguished itself in a marked degree.

It is impossible to attempt more than the briefest reference to this report in the limited space allotted. It is sufficient to say that it contains valuable matter, carefully compiled and systematically arranged, which classes it as a volume that will compare favorably with the best of our State Board of Health reports.

Scientific Medicine in its Relation to Homeopathy. By Professor Theodor Bakody, M.D., of the Buda-Pesth University. Translated from the German by Rudolph F. Bauer, M.D. Philadelphia: Boericke & Tafel, 1891.

This essay, it is stated, was written in response to an invitation from the *Pester Lloyd*, asking for an expression of opinion from the standpoint of the author, concerning the value of the Koch method of treatment, and the similarity of the same to the Hahnemannian methods. With the blind devotion of an idolater, Dr. Bakody acknowledges that "as a scientific follower of the doctrines of Hahnemann," he has "always endeavored . . . . to give the same a suitable, substantial basis, ... in accordance with the scientific knowledge of the day." He builds his superstructure first, and then endeavors to mount it

on a shifting foundation. That he is not an ordinary homeopath, however, is indicated by the fact that he admits of various methods for the treatment of disease, with which, he states, the scientific, educated physician must be familiar. Contrasting what of Hahnemannism he accepts with what he rejects, absolutely or by modification together with what he adds, there is little left on which to base a distinctive dactrine.

Koch's method of treatment is considered "an exact scientific confirmation in vindication of isopathy. The latter . . . . is a branch deviating from the more advanced Hahnemannian principles, and extends far beyond the limits of the law of similarity. . . . . Koch is to be regarded as the scientific founder of the isopathic doctrine." As a result we have homeo-therapeutics and iso-therapeutics. The presumption of the writer of the essay reaches a climax when he says that "Koch's method . . . . is rooted in homeopathic soil; his effort is essentially one in accordance with the Hahnemannian principle."

The aim of tbe true physician is to save life. It matters not to him whether the remedies he employs are designated symptomatic, specific, homeo-therapeutic, iso-therapeutic, antidotal, or what not. He must only not be restrained in their employment by considerations of theory or dogma.

The moral of all the agitation on the subject of homeopathy is that either there is a good deal of deception being practised upon a credulous public, or that the clouds of superstition have not yet been raised.

PRACTICAL INTESTINAL SURGERY. By FRED. B. ROBINSON, B.S., M.D., Professor of Anatomy and Clinical Surgery, Toledo Medical College, Toledo, Ohio. Vol. I, 1891. (The Physician's Leisure Library.) 12mo., pp. 167. Geo. S. Davis, Detroit, Mich.

To those who have followed closely in the wake of the later developments of the great movement in intestinal surgery that was initiated by Senn, at the Ninth International Medical Congress at Washington, in 1887, the name of Dr. Robinson must be familiar. While the author has not entered the literary arena until quite recently, the rapidity with which his communications have followed one another and the energy he has displayed in his experimental work—now represented by over 175 experiments on animals—as well as by his useful additions to the technique of intestinal operations, entitle him to a prominent seat in the bench occupied by the leading followers of the distinguished Western master, to whom this little treatise has been gracefully dedicated.

Outside of the preliminary anatomical sketches of the intestines and peritoneum, which are delineated in an unusually graphic and even picturesque and interesting style, the remainder of the 167 pages that make up the text are devoted to bowel-obstruction in its various phases and to the general and special operative measures that the most advanced surgery has suggested for its relief. Notwithstanding the limitation of his very narrow space, it is remarkable how well the author has succeeded in elucidating the most important technical problems that are involved in the subject. As an ardent partisan of anastomosis and as the parent of the "rawhide" and "segmented rubber plates," it is natural that he should exhibit special solicitude for his offspring in the numerous applications that can be made of these "aids" in anastomosis. To his credit be it said, that in the opinion of one who has carefully tried and compared almost all the numerous "aids" that have been suggested in the last two years as substitutes for the decalcified bone plate of Senn—from Abbe's catgut ring to the latest, Dawbarn's potato plate—none has been found superior to Robinson's segmented rubber plate; none, except the elegant decalcified bone plate at present manufactured under Senn's directions, by Shorse, of Milwaukee.

In addition to the technical innovations described by the author, this booklet contains many facts of a statistical character which are highly creditable to the author's condensing powers; the practical analytical table in the chapter on diagnosis (p. 44) being alone worth five times the price of the volume.

We can only regret, however, that so meritorious a production should have been clad in so poor a raiment; that ideas of merit should have been disfigured by so many glaring solecisms, and particularly by the total disregard of the most ordinary typographical precautions.

A SHORT MANUAL OF ANALYTICAL CHEMISTRY; QUALITATIVE AND QUANTITATIVE; INORGANIC AND ORGANIC. By JOHN MUTER, M.A., Ph.D., F.R.S.E., etc. First American from the Fourth English edition. Edited by CLAUDE C. HAMILTON, M.D., Ph.G., etc. Philadelphia: P. Blakiston, Son & Co., 1891.

THE American edition of Muter's Analytical Chemistry comes to us adapted to the United States Pharmacopœia, with several additions by the American editor. These are made principally in the chapter on the analysis of urine, the tests for certain organic compounds not contained in the English edition, also to the analysis of water, of milk, etc. As a systematic and brief guide for general chemical analysis this work is certainly useful and reliable, one that is well known and adopted abroad. To make such a work, however, a guide for the study of chemistry and chemical analysis by medical students and physicians is a difficult task, notwithstanding Dr. Hamilton's endeavor in this direction. The food-analysis is insufficient, and the chapter on milk, while unnecessarily complicated, must yield results, especially so far as the fat is concerned, that are far from accurate. Under the head of "Wine, Beer, Tincture, or Colored or Sweetened Spirit," an estimation of alcohol contained in these appears to be all that is aimed at, while tests for fuchsin, amylic alcohol, lead, phosphates, sugar, tannin, etc., are not given in connection with them. The analysis of the urine as given here is probably the weakest part of the book. In stating that mucin is also precipitated by the boiling-test for albumin the author is at variance with observers generally. It is universally conceded that if urine is slightly acidulated with acetic acid, mucin, if present in solution, will be precipitated and should then be filtered off before boiling, while the latter process cannot then precipitate mucin. The plates of the microscopic appearance of urinary sediments are the old-time cuts reproduced in an inferior manner. The direct application of Pettenkofer's test, as quoted here, will hardly ever yield any results. The produc-

tion of Teichmann's crystals as a test for blood is not mentioned, nor are pus and acetone as pathological ingredients of urine considered, or tests for them given.

We only select the foregoing points to indicate in which direction the author might have improved his work, and while we do not wish to underrate the value of its strictly chemical part we cannot indorse this work as one of special merit or service as a guide for the medical student or the physician in his chemical work.

A TREATISE ON PRACTICAL ANATOMY FOR STUDENTS OF ANATOMY AND SURGERY. By HENRY C. BOENNING, M.D., Lecturer on Anatomy and Surgery in the Philadelphia School of Anatomy; Demonstrator of Anatomy in the Medico-Chirurgical College, etc. 12mo. pp. xvi, 481. Philadelphia: F. A. Davis, 1891.

IN this work the aim of the author has been to arrange the subject so as to make it equally serviceable as a text-book on anatomy and as a dissector.

The book, according to the author's statement in the preface, is not a compilation, but is the result of years of practical work and a large experience in teaching. The descriptions in the text have been taken from the bone itself and from the subject on the table, and are so treated as to be adapted to the needs of the student.

Some parts of the work are good, as the sections upon the nervous system and the teeth; but other parts are entirely too superficial, as the section upon the vascular system—a division of such great practical importance to the surgeon—in which the relations of the larger blood-vessels are entirely omitted. The text, for the most part, is clear and forcible, but the matter is less extensive and less complete than any one of the well-known and much-employed compends of Potter, Nancrede, or Young. Its position as a literary effort is between such condensed and complete works as those mentioned, and such practical treatises as those of Heath, Holden, and Weise; and considering the limited character of the work, it would better have been called a hand-book, since it is neither a compend nor a treatise. The print is large, and the illustrations, especially the original cuts, are clear and good. The statement, however, is made in the preface that the illustrations have been carefully selected and their sources credited; on looking carefully through the work, except those few that are known to be original, many of the cuts are recognized as old acquaintances in Wilson and Heath, while others of them are reduced from the first English edition of Gray's *Anatomy*, but in not a single instance is the source credited.

The great fault with the work is its incompleteness—an error of omission rather than of commission—necessitating reference to standard treatises or recognized compends.

For example, the synovial membranes, other than those of the wrist and tarsal articulations, are not mentioned; "the great vessels and nerves, and some muscles," that pass through the superior opening of the thorax are not named. It is remarked that "the breasts are abundantly supplied with blood," and the blood-supply of the organs of special sense, of stomach, intestines, and ovaries, are passed in silence under the description of these viscera.

Less than four lines are devoted to the mediastinum. The orthography is correct, except the confusing description of the corpuscles of *Pacini* as the *Pacchionian* corpuscles (p. 438).

In a word, the incompleteness of the work must necessarily limit its field of usefulness.

SYLLABUS OF THE OBSTETRIC LECTURES IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA. By RICHARD C. NORRIS, A.M., M.D., Demonstrator of Obstetrics, University of Pennsylvania, etc. Second edition. Philadelphia: W. B. Saunders, 1891.

BOOKS of the class to which this one belongs would do little harm if their employment were restricted to the legitimate objects to which such publications are devoted—that is, as a guide or index to higher study. Too often, we fear, however, they are utilized as text-books, with the contents of which the student can become sufficiently familiar to make a good showing at a quiz-demonstration, or to pass a formal examination. By their use the stimulus to intellection is removed, and study becomes perfunctory, the processes by which knowledge is rendered permanent and valuable and fruitful are permitted by inactivity to become degenerate. The student could better afford to cover less ground thoroughly, so as to be familiar with every step of his way, and not be lost in a wilderness of meaningless language. The mind that is led along low levels cannot be expected to rise to great heights.

Such books are necessarily inadequate to the wants of the student. In the hundred or two hundred pages allotted them they can only deal superficially and incompletely with the vast number of subjects that come within their scope. That defects and imperfections of statement should occur will occasion no surprise.

This syllabus—the first edition of which was exhausted in eighteen months, and which is conveniently interleaved for the addition of notes—is not worse than many of its congeners, and is better than some. It is only to be regretted that a demand has been created for books of its class.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK. Eighty-fifth Annual Session, held at Albany, February, 1891. Philadelphia: Wm. J. Dornan.

THE association the volume of Transactions of which is under review comprises some of the foremost physicians of this country; consequently, the contributions contained in the work are, in greater part, of more than ordinary value—representing, as they do, the views of men thoroughly competent to speak authoritatively on the subjects treated. Unfortunately, the space at our command does not admit of a detailed account of all of the articles, or even of many of them that are deserving of an extended notice; therefore we shall be obliged to content ourselves with a brief mention of those papers which, in our opinion, are especially valuable to the general practitioner:

The discussion on "Tuberculosis" includes a paper on "Its History," by Dr. H. R. Hopkins; "Its Pathology and Etiology," by Dr. Heneage Gibbes; "Tuberculous Manifestations in the Upper Air-tract, and Special Treatment Thereof," by Dr. John O. Roe; "The Treatment of Tuberculosis, including Prophylaxis as Related

to Climate," by Dr. Samuel R. Ward; "Its Treatment as Related to Therapeutics," by Dr. E. L. Shurly; "Inoculations with Professor Koch's Tuberculin," by Dr. A. Jacobi; and a paper on "Koch's Treatment in the Mount Sinai and the New York Polyclinic Hospitals, February, 1891," by Dr. Henry Newton Heineman. These papers occupy nearly sixty pages, and taken *en masse* may well be considered to represent the present status of the disease under consideration.

Dr. William Wotkyns Seymour next considers "The Treatment of Gall-stones." This writer is opposed to protracted medical treatment, and advises operative measures when the attacks are of increasing frequency and severity. The operation he recommends is cholecystotomy, the mortality of which procedure, he asserts, is probably less than 5 per cent.

The discussion on "Appendicitis" includes papers by Drs. Charles McBurney, William W. Keen, Lewis A. Stimson, George R. Fowler, Robert F. Weir and A. Vander Veer. Taken collectively, they leave but little to be said on the subject.

The paper on "The Pathology of the Caisson Disease," by Dr. Howard Van Rensselaer, is of exceedingly practical importance, and the author is to be congratulated upon the interesting and scientific manner in which he has presented the results of his investigations. This article was the Merritt H. Cash prize essay of the New York State Medical Society, 1891.

Taken in its entirety, this volume of the Transactions of the Medical Society of the State of New York maintains the high character of the former issues for useful, scientific work.

THE URINE, THE COMMON POISONS, AND THE MILK. MEMORANDA, CHEMICAL AND MICROSCOPICAL, FOR LABORATORY USE. By J. W. HOLLAND, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Illustrated. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co., 1891.

THIS little work ought to be so thoroughly well known as to require no introduction. It contains, conveniently arranged and easy of access, a good deal of information especially adapted to the wants of the student in the pursuit of a practical knowledge of the methods of making clinical examinations of the urine and of the milk and the tests for the more common poisons. The book can conveniently be carried in the pocket, and is peculiarly suited for use in the laboratory. It can confidently be recommended to students and practitioners.

MINISTERING WOMEN: THE STORY OF THE ROYAL NATIONAL PENSION FUND FOR NURSES. By GEORGE W. POTTER, M.D. London: "The Hospital," 1891.

THIS interesting account of the founding and growth of the Royal National Pension Fund for Nurses will find, no doubt, in England a large number of readers. The object for which the author and his friends are working will naturally appeal most warmly to the community in which this work has been carried on. The name of Junius S. Morgan, however, so closely identified with the success of the undertaking, will cause the book to be received with interest in this country.

The writer has endeavored to state the history of the Pension Fund in clear terms, so that the account will appeal, first, to the body of trained nurses, and in the most common-sense way; and, secondly, to the charitable public. It is to be hoped that this book will attract the attention of the nurse-schools in this country, to the end of awakening a general interest in a similar undertaking, and of arousing nurses as a class to the importance of provision for their future condition.

CHILDBED NURSING. By CHARLES JEWETT, A.M., M.D. New York: E. R. Felton, 1891.

THIS manual contains in forty pages all that is of practical value to nurses and graduates upon the subject of obstetrical nursing. The author has adopted an arrangement in which the essential points are included in condensed paragraphs under general headings. The reader is thus enabled to take in at a glance the teachings of the lecture-course and ward-training, arranged in a classified form.

Some of the directions are somewhat absolute, and the writer asserts himself with unusual positiveness in regard to certain points that admit of difference of opinion. This, however, is a consequence of the manner in which the book is compiled, and detracts in no respect from its usefulness as a manual of exact teaching.

THAT UNCOMFORTABLE SHOE. A Treatise written in Clear and Plain Language on the Foot and its Uses in Walking, the Ill-fitting and the Comfortable Shoe, the Causes of and Remedies for Cobblers' Cripples, Corns, Bunions, etc., Containing also a Chapter on the Care of the Feet, and Describing the Taking of a Cast of the Foot. By AVARD J. MOORE. Profusely illustrated. New York: M. T. Richardson, 1891.

THE foregoing is sufficiently descriptive of the scope of the booklet that bears its title. The author, "a practical shoemaker," has admirably succeeded in presenting in a clear and comprehensive manner all that is worth knowing of the foot as an agent in progression, and of the means of providing it with a suitable and properly adapted covering. The book can be read with profit and advantage by both those who make and those who wear shoes.

3000 QUESTIONS ON MEDICAL SUBJECTS, ARRANGED FOR SELF-EXAMINATION, ETC. Philadelphia: P. Blakiston, Son & Co., 1891.

A little vest-pocket booklet, of 144 pages (a blank-leaf alternating with the printed ones), containing test-examination questions upon the different subjects of the medical student's studies, and with numbers following each question that refer to books and pages wherein the answers may be found. The books referred to are for the most part the Blakiston "Quiz Compends."

THE PHYSICIAN'S VISITING LIST FOR 1892. Philadelphia: P. Blakiston, Son & Co.

A PUBLICATION so well known that special commendation is superfluous. The dose-table contains a parallel

column giving the metric equivalent of the apothecaries' weight.

RECORDS OF THE ASSOCIATION OF ACTING ASSISTANT SURGEONS OF THE UNITED STATES ARMY, A.D. 1891. Edited by W. THORNTON PARKER, M.D., Recorder A. A. A. S., Salem, Mass. Salem Press Publishing & Printing Co., 1891.

THIS volume, excellently printed and bound, will be prized by army surgeons for its biographical information. It contains a transcript of United States Army regulations concerning acting assistant surgeons and other pertinent information.

THE MEDICAL NEWS VISITING LIST FOR 1892. Philadelphia: Lea Bros. & Co.

A MOST serviceable helper for the general practitioner, and one of which by experience he has learned the usefulness. The present edition has in many ways been revised and improved.

BURDETT'S (ENGLISH) HOSPITAL ANNUAL AND YEAR-BOOK OF PHILANTHROPY, 1891–1892: Containing a review of the position and requirements of the Voluntary Charities, and an exhaustive record of Hospital Work for the Year. It will also be found to be the most useful and reliable guide to the British and Colonial hospitals, dispensaries, nursing and convalescent institutions and asylums. London: "The Hospital," 1891.

A VALUABLE and trustworthy reference-book, the purpose and scope of which are expressed in the title-page quoted.

NEWS ITEMS.

Muscular Development Late in Life.—The *Lancet* describes a military bicycling trip in which one hundred miles were made in about ten hours. The veteran cyclist, Major Knox Holmes, almost at the close of his eighty-third year, mounted on a tandem, accompanied the corps, and arrived at the termination of the expedition five minutes in advance of the rest. He was a little distressed on dismounting, from too hard riding the last few miles, but he soon threw off his fatigue and joined his companions at dinner with thorough zest. His condition is physiologically peculiar. In twelve weeks' new training he has, in the most striking manner, "developed muscle" in the external and internal vasti, the rectus, and the muscles that form the calf of the leg—in refutation of the physiological doctrine that after threescore years and ten there is no new development of muscle.

The Late Dr. S. R. Knight.—At a recent meeting of present and former members of the medical staff and ex-residents of the Episcopal Hospital the following minute was adopted:

The present and past members of the medical staff of the Episcopal Hospital and its former resident-physicians desire to express the deep regret which the death of Dr. S. R. Knight has caused them. All of the many who have been associated with him in his long service as Superintendent of the Hospital feel that they have lost a sincere and honest friend. They remember the kindly advice, the shrewd help and counsel that he had always ready for their difficulties, professional and personal, his constant interest in all the varied work of the institution, and the wisdom with which he made his own duties at once an example and an opportunity to the younger men in the sphere of their labors.

Eleventh International Medical Congress.—At the recent Italian Congress of Internal Medicine arrangements were inaugurated for the next International Medical Congress, which is to meet in Rome in 1893. The last two weeks in September would be the best time for the meeting. Baccelli has been made chairman of the organizing committee; Maragliano, general secretary. There will be twelve sections represented respectively as follows: Anatomy, Antonelli; physiology, Albini and Albertoni; pathology, Bizzozero and Foà; pharmacology, Cervello; clinical medicine, Baccelli, Maragliano, Murri, and Bozzolo; surgery, Bottini; obstetrics, Morisani; psychiatry, Morselli and Tamborini; ophthalmology, Devincenzi and Secondi; dermo-syphilopathy, Campana and Barduzzi; forensic medicine, Tamapia; hygiene, Pagliani, Celli, and Canalis.

The Association of Military Surgeons of the National Guard of the United States will hold its second annual session at St. Louis, April 19, 20, and 21, 1892. An interesting program of addresses by prominent surgeons of the National Guard and of the United States Army has been arranged, and scientific papers on military and accidental surgery will be discussed. Dr. Eustathius Chancellor is chairman of the Committee of Arrangements.

The Southern California Medical Society held its eighth annual meeting at Riverside, on December 2 and 3, 1891. Norman Bridge, M.D., of Chicago, read a paper "On the Later Methods of Treating Tuberculosis," and William A. Edwards, M.D., late of Philadelphia, in conjunction with James Sears Waterman, M.D., of New York, presented "A Study of Hepatic Abscess, with the Exhibition of Post-mortem Specimens."

The Late Dr. Lippert has bequeathed four thousand five hundred dollars (eighteen thousand marks) to the medical faculty of the University of Berlin for the endowment of a prize.

Fischer, formerly Professor of Psychiatry at Prague, died recently.

CORRECTION.

In the report of a case of amebic dysentery, on page 659 of THE MEDICAL NEWS of December 5, 1891, the figures "eight or ten millimeters" apply to the *circumference*, and not to the diameter, as stated.

BOOKS AND PAMPHLETS RECEIVED.

Epilepsia Procursiva. By John Ferguson, M.A., M.D., L.R.C.P. Reprint, 1891.

The Treatment of Uremic Coma and Convulsions. By John Ferguson, M.A., M.D. (Toronto), L.R.C.P. (Edinburgh). Reprint, 1891.

Infantile Spastic Paraplegia. By John Ferguson, M.A., M.D., L.R.C.P. Reprint, 1891.

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ORIGINAL ARTICLES.

CAN WE DRAIN THE FALLOPIAN TUBES?

BY SARAH E. POST, M.D.,
OF NEW YORK CITY.

IN speaking of drainage of the Fallopian tubes, we do not refer to artificial incisions, but to the question as to whether in pathological conditions we can utilize the natural outlet of the Fallopian tubes for drainage.

Theoretically, nothing would seem to be more certain than that we can drain the Fallopian tubes through the uterus; practically, nothing seems less to be expected. I have a certain amount of evidence, but evidence that is of an inferential character, and that perhaps requires corroboration in a more extensive field. I have therefore chosen to present the matter interrogatively. In a quiet way I have been studying this subject for the last six years. Reports of a number of the cases thus studied will be found in medical journals as follows: *N. Y. Medical Record*, January 15, 1887; *N. Y. Medical Journal*, September 24, 1891; *Transactions of the American Gynecological and Obstetrical Association*, 1889; *American Journal of Obstetrics*, February, 1891. From these reports it will be seen that I think that by palpation I can diagnosticate a prolapsed and swollen tube; that I can overcome the adhesions that often imprison the collections in these tubes; and that I have evidence of the discharge of such collections through the uterus.

METHOD OF EXAMINATION.—I cannot make this diagnosis *per vaginam* by the index finger alone. I examine by rectum in virgins, and in married women I use my first two fingers, or insert my whole hand up to the thumb. I use the hand corresponding to the side affected. Where the whole hand is employed, I place the patient upon the back, and the palmar aspect of the fingers reaches the patient's opposite side. It will be seen that the examiner's left hand is applied to the patient's left side, and the right hand to the right side, even in the dorsal position. When one or two fingers are sufficient, I prefer to have the patient upon the side, and I believe that a better conception of the conditions is obtained when the affected side is uppermost. Whether this is true or not, a good deal is gained by examination upon both sides. While examination by rectum gives you a nearer access and enables you sometimes to make out the relations of the uterus better, I think that for an appreciation of the adhesions that bind down the tubes the vaginal examination is the more useful.

CONDITIONS FOUND.—Examination may disclose a swelling in the anterior cul-de-sac, directly continuous with the horn of the uterus; a swelling at the side close to the uterus and displaced with it; or, more frequently than either of the foregoing, an adherent mass posteriorly to the uterus, from which the cervix cannot be separated. Any attempt to withdraw the cervix from this mass gives pain. The posterior cul-de-sac is characteristically short and tense. You may be able to outline the tube in this position, or you may not. The first two delineations represent practically the same condition—a collection of pus, or perhaps the peculiar milky tubal secretion, without adhesions, as a rule; the last, a catarrhal condition, with posterior prolapse, peritonitic inflammation, and adhesions binding the mass down. This condition is at least sometimes secondary to the other two. It seems to follow discharge or absorption of the accumulation, when these occur without the precautions of treatment. Apparently the previously distended tube prolapses from loss of tone, and either before or after prolapse retrostalsis of its secretion establishes the adhesions in which it is imbedded. I have twice had return of the lateral accumulation after liberation of such a posteriorly-adherent tube. While the resulting condition was to myself more alarming than the original one, it was without suffering, and the patient, previously regular in presenting herself for treatment, could no longer be induced to continue her attendance at the clinic. Subsequent examination in one of these cases showed disappearance of the secondary collection, the tubes remaining in place.

HISTORY.—The history of salpingitis is, as a rule, very characteristic. Usually it dates back to a severe illness, with confinement to bed, with fever, and pain, for which quieting medicine was required. In the active stages there are profuseness and irregularity in the menstrual flow. Later, with contraction of the adhesions, scantiness in the flow is not uncommon. Sterility is the rule. Dysmenorrhea is present, I think, in all cases. This dysmenorrhea is peculiar; the pain either precedes or follows the flow. A leucorrheal discharge, not thick and tenacious, and that may even be described as watery, is characteristic of these periods. This discharge may

be readily differentiated by its characteristics and history from the product of cervical or endometrial catarrh. The accumulations at the side and in front of the uterus are comparatively without pain. During the intermenstrual intervals the woman with the pus-sac does her work without discomfort. The suffering in the cases in which the displacement is posterior and bound down by adhesions is, on the contrary, enormous. This suffering is not expressed alone in actual pain, but also in the protean forms of hysteria, of which I am inclined to think it the most efficient cause. The patient has sacral and inguinal pain; also, as a rule, difficulty in walking, is irritable and suffers from headache, dizziness, impairment of vision, and other nervous disorders.

The Question of Drainage.

Chronic catarrhal salpingitis. Here the question of drainage is complicated with that of the liberation of the tube. I think that in a certain number of cases I have overcome the adhesions that bind down these tubes, have restored them to a somewhat normal position, and have drained them through the uterus. My reasons for thinking this depend upon disappearance of the posterior mass, deepening of the cul-de-sac, relief of pain and discomfort, menstrual regularity, demonstration of an unusual discharge in some cases, and, last, pregnancy after sterility of from four to six years. Of the latter I have reported three cases (*Journal of Obstetrics*, February, 1891).

The treatment has extended over a period varying between six months and three years. As a rule, for the first three months, all procedures must be experimental. By this I mean that treatment must be limited to hot injections and the careful application of tampons. My object in treatment from the first is the stretching of the posterior cul-de-sac. Tenderness determines the degree of pressure that can be borne. In some cases applications of iodine seem to reduce the sensitiveness. When cotton tampons are used, iodine at least does no harm. I have seen no special good from the use of glycerin. The patient is told at the commencement of her treatment just about how long it will take to give her relief, and almost without exception her previous sufferings have been such that she acquiesces with patience in the more or less protracted preparatory treatment. Having established a degree of tolerance in the part, I next introduce the inflated-ring pessary. This is the old-fashioned air-ring. It is inflated to almost its full capacity. As sold, these rings are either too tense or too lax. The tension may be regulated by means of the hypodermatic needle and an atomizer bulb. Upon some part of the circumference will be found a mass of wax. It is through this mass that the needle should be plunged. The bulb may be attached after insertion. This is an important matter, as its degree of tension determines the value of the ring.

In application the ring should be large enough, so that the anterior portion is depressed by the pubic bone, the posterior rising and distending the posterior cul-de-sac. First applications may be painful; if this is the case, the ring should be withdrawn within a half-hour or worn only a short time and reintroduced at the end of two or three days. As a rule, when there has been preparatory treatment, tolerance is perfect from the first, and the results obtained by means of the ring are far superior to those of the tampon. Within a few days the cul-de-sac will be deepened, and with this stretching of the cul-de-sac pain will have disappeared. With the ring in position the patient will walk even from the first the usual distances walked by women and will be surprised at her renewed incapacity when the ring is withdrawn. The difficulty of walking is not alone immediate discomfort, but the production of a train of persistent nervous symptoms. The sufferer from chronic salpingitis must keep still, because if she walks she will have a "nervous headache" as a result, or she becomes "irritable," or "her eyes give out," etc. This woman may have an appearance of health and among her friends the difficulty pass as a fancy, the condition contrasting in this respect with the appearance of the patient in ovarian prolapse. Almost without exception the friends will tell you that the person could walk if she would—that she is, in fact, hysterical and the victim of a fancied incapacity. I regard the difficulty of walking as due to imprisonment of the fimbriated extremity of the tube, which, particularly in walking, is thus subjected to friction between the uterus and rectum. The ring by separating the uterus from the rectum relieves the source of friction and supports the sensitive part, often from the first, even before liberation is effected. The fact of a material basis for the woman's incapacity has been repeatedly proved by her immediate resumption of active habits upon the application of this support. For details I refer to several cases reported in the *New York Medical Journal*, September 24, 1887. After a period varying between six months and a year the cul-de-sac may be found empty and the ring can be discontinued. Presumably the liberated tube resumes its normal position. I have in some cases found a subsequent return of the contraction in the floor of the cul-de-sac, without prolapse of the tube, again fixing the uterus and causing renewed pain. In such a case a return to the ring for a month or two will restore the part to a comfortable condition. In still other cases the patient has, after the establishment of apparent cure,

returned with a sharp attack of inflammation, and, in one case, a renewed accumulation, this time at the side of the uterus. In such a case treatment must be the same as for a primary attack. The ring is not applicable in acute conditions; it should be dispensed with and the patient should have rest from active work. Even without such rest, however, I have at the end of three months found the parts in a condition permitting the resumption of the ring, and with it a return of health. I might add that, even in a condition of great sensitiveness —even in a condition of invalidism—the application of this ring will afford a consciousness of capacity for effort, and in a surprisingly short time even the constitutional appearances of health. While, therefore, the system of treatment may appear tedious, and even unduly prolonged, it does not have this character after the first three months. The patient manages her ring herself, and she does not, as a rule, return to the physician until it has to be renewed. While wearing the ring the patient feels and looks well, she becomes unconscious of her malady, and as time elapses forgets to wear the ring at all; she thus accomplishes her own cure; such forgetfulness, in my experience, indicating absence of the conditions for which the ring was applied.

Perhaps I need not explain that it is difficult for me to mention any considerable number of cases that I can follow further. In some, however, absolute cure, so far as replacement is concerned, does not occur. The patient continues to have intervals of renewed symptoms, and she again and again returns to the ring when thus troubled, or when called upon for unusual work. I have, however, other cases in which absolute disappearance of the difficulties traceable to the prolapse has resulted. The patient has had no need to return to the ring, and she even forgets the details of her former sufferings.

The occurrence of a discharge through the uterus in this class of cases has been pretty thoroughly established. It has happened in a number of instances that the patient has herself reported an unusual discharge of a watery character shortly after commencing to wear the ring. I have associated this discharge in my mind with the liberation and elevation of the tube. It has been irritating in some cases, the irritation subsiding, however, after a few days, without local treatment.

The patient inserts this ring herself. She is directed always to leave it out at night. By this means cleanliness is assured, and the muscular tone of the vagina is preserved. I think, too, that the effect upon the broad ligaments themselves is better than if the support were constant. In removing the ring the posterior fourchette should be drawn backward with the finger so as to admit air to the vagina. Otherwise the patient will pull against a vacuum, and downward displacement of the uterus and more or less pain will follow. In inserting the ring the woman assumes the squatting position. She folds it into a boat-shaped mass, and if well lubricated with vaselin it is inserted without difficulty. She then assumes the knee-chest posture, when it rises spontaneously to the desired position.

Pyosalpinx. I would here like to refer to two cases, both, in part, previously reported.

The first is that of a single woman, aged twenty-two years, who presented herself in November, 1888 (*Trans. Amer. Gyn. and Obstet. Soc.*, 1889), with retroflexion, a mass posterior to the uterus, consisting apparently of an adherent ovary and tube, and at the left side a tumor the size of a walnut, representing apparently a tubal collection. With elevation of the uterus this tumor became softer, and diminished in size. Since the report referred to, the girl has married. She tells me that some time ago her husband contracted a mild type of urethritis that his physician ascribed to his wife's leucorrheal discharge. The woman herself remains practically well—that is, she looks and feels well. She has still a retroflexion, an adherent mass upon her right side, and a pus-sac upon her left. She returns about once in six months with increased size in the tumor, and a return of discomfort. She is tamponed for about a week or longer, and the discomfort disappears while the sac contracts.

The second case (*Amer. Journ. of Obstet.*, Feb., 1891) may be briefly described as a case of sterility, with a cachexia resembling that of chronic tuberculous abscess. The patient was first seen in June, 1888. Examination showed the uterus fixed, and two globular masses also fixed in the pelvis, one posteriorly and to the right, and one on the left side. In June, 1889, the tumors are said to be smaller, less tense, and the uterus more movable. The patient somewhat later discontinued treatment. In September, 1890, she returned with a four months' pregnancy, the uterus being drawn to the right side by the adherent mass. Sugar and albumin were present in the urine shortly before term. The patient was delivered February, 1891. The labor was without complications, but the child had for some days been dead, and the placenta was degenerated, so that it was bloodless, it was said. Convalescence was prompt, and there had been no return of the accumulations, while the cachectic appearance, previously so marked, had been almost lost.

I regard these two cases as cases of undoubted pyosalpinx on account of the persistent refilling of the sac and the urethritis in the first case, and on account of the cachexia in the second. From the history, too, I see no reason to doubt that we have here had drainage through the uterus. In both cases the inflated ring was worn for a period of from six to twelve months. In both cases the present health of the patient is good.

A third case may be added:

This patient came to me in June, 1888. She was a woman of fifty-five years, who had reached the menopause seven years previously. The patient complained of distress on walking, and nocturnal pruritus that often awakened her from sleep. She was not conscious of any discharge. Examination showed a zone of irritable appearance in the neighborhood of the carunculæ myrtiformes. The vagina above was pale and the cervix atrophied. There was retroflexion of the body, which seemed membranous and soft, and yet globular. The examination suggested to me a cystic growth, yet the sound entered to the fundus, and the cavity measured two inches. The examination produced no discomfort. The patient told me that she had at some previous time suffered from a pelvic abscess that discharged through the rectum, but I did not connect this fact with the condition before me. The body could be replaced, and with the patient in the lateral position I inserted a tampon, using two pledgets of cotton, one posteriorly to the body, and one below and in front to keep the first in place.

The patient walked with comfort, went about to a number of stores, and did some shopping that afternoon. She returned in the morning, however, with her napkin and clothing saturated with a watery, vile-smelling discharge, leaving a brownish tinge. This discharge had evidently become established during the night. It persisted for a day or two, when the woman left town (she lived in a neighboring city). I have learned from her physician that she subsequently suffered from a return of her "pelvic abscess," and that the discharge was through the rectum as before. This physician had not had her attention directed to the uterus as a possible means of drainage in this case. The inference seems to me, however, quite justifiable in view of the amount and offensiveness of the vaginal discharge following the use of my tampon.

Follicular salpingitis. I have one case that seems to me to come under this heading:

The patient was a woman, then forty-two years old, who came to me in 1885 with a retroverted uterus and both ovaries prolapsed. Menstruation was profuse, lasting a week. The condition had been of long standing, and the patient suffered from pronounced melancholia and hysterical attacks, with convulsive seizures lasting for hours. (This case is referred to as Case II, *N. Y. Medical Record*, January 15, 1887.) At the date of that report the hysteria had been overcome, and the prolapsed ovaries and uterus would retain a normal position for some days at a time without support. A laceration of the cervix was operated upon December 31, 1887. The patient suffered from hysterical mania after the operation and recovered slowly.

The patient presented herself again May 20, 1888, with pain radiating from the sacral region. I have a very vivid impression in regard to the pain in this case. It was acute and unbearable, contrasting with her former ovarian pain,[1] and keeping her awake at night. The recumbent position gave no ease. Examination at this period showed a mass in the posterior cul-de-sac the size of a hazel-nut and very sensitive. The uterus was in position; the cervix was united and healthy; the ovaries were large, but high and movable.

On May 25th the patient returned relieved of her pain, and saying that she had had a cheesy discharge that could have been scooped from the vagina with a spoon. Examination showed no irritation of the vagina, while the tumor could no longer be found in the cul-de-sac. A series of these enlargements followed. May 30th, a tumor the size of a hazel-nut was found in the left tube a half-inch from the uterus. Several nodules were found also in the right tube. The affection lasted for over a year, with intervals of comfort. The height of distention would always be characterized by great pain, after which the cheesy discharge, and relief followed. On March 13, 1889, I have an entry showing the uterus to be healthy, menstruation lasting but three days, the uterus not fixed, no accumulations, and the parametria not sensitive, although the cheesy discharge at intervals recurred. At the last date mentioned, March 13, 1889, the patient suffered from pain in the chest, and examination showed a questionable condition of the lungs. The signs were obscure. During the year the patient had lost flesh. At the present time the discharge has apparently ceased, the accumulations no longer form, but we have, progressing apparently, a tightening of the broad ligaments, so that the uterus is becoming fixed.

In this case I do not think that there has at any time been a peritonitis, and for this reason it seems to me probable that the shortening of the ligaments is due to cicatricial contraction of the ruptured follicles. The uterus is now in retroversion, but the ovaries are high; and unless doing very hard work, or trying to walk a long distance, the woman feels comparatively well. She has regained a good weight, and looks well. She sleeps, being no longer disturbed, as during the most of her previous menstrual life, by pain. She is able to do her housework, including her washing. It seems probable that with the establishment of the menopause the cicatricial tissue will support the retroverted uterus so as to give her complete comfort. A pessary or tampon of any description cannot now be worn.

Follicular salpingitis has been described by Martin. I have no particular example with which to compare my case, but the history seems to me to point to this disease.

The treatment has been limited to the use of the

[1] I might add that the nervousness of salpingitis also contrasts markedly with the depression and melancholia characteristic of ovarian cases. In my experience the ovarian cast of countenance is never assumed in salpingitis. If at ease and spared exertion, the patient suffering from salpingitis is cheerful and looks well.

hot douche, and, during the earlier stages, support. With the progress of cicatrization, as I have explained, support has ceased to be borne.

The question of discharge through the uterus does not, I think, admit of doubt in this case.

LITHEMIA.[1]

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THERE are many questionable theories concerning the production and elimination of uric acid. It will not be the purpose of this paper to expose their fallacy or to discuss at great length the merits of the more rational views. It will be sufficient to consider some of the well-defined clinical facts that have been forced upon the notice of the writer by the frequency with which he has encountered the condition designated lithemia.

Murchison was the first authority to clearly define and discuss that morbid condition of the blood due to functional derangement of the liver, and characterized by an excess of uric acid in the urine.

It was formerly an accepted theory that a nitrogenous diet must be strictly prohibited in the treatment of lithemic subjects. Although by certain of our British confrères this view is still maintained, there is among physicians that have devoted especial study to the subject a growing conviction that the very converse of the old theory is more nearly correct, and that the impaired metabolic power of the liver is generally due to an excessive fatty and carbohydrate diet.

The *causes* of lithemia may be briefly summarized as follows:

1. Improper food, producing acid indigestion.
2. Indulgence in beer, wine, and spirituous liquors.
3. Lack of proper air and exercise.
4. Various nervous influences.
5. Inherited dyscrasiæ.

Finally, any influence that tends to diminish the alkalescence of the blood, or that overworks the hepatic cells and arrests the complete oxidation of proteid material, may be sufficient to cause the presence of uric acid in excess or of oxalate of calcium in the urine. The mere presence of uric acid, *per se*, is no evidence that this substance is being produced in excess. It is simply thrown out of solution by a relative diminution of the alkaline bases with which the uric acid is combined. The condition must be caused by a chronic impairment of digestion before it can be strictly classed as pathological.

[1] Read before the Colorado State Medical Society, Denver, June 17, 1891.

I believe that no cause operates so constantly in producing a lithemic condition as excessive indulgence in sugars, starches, and fats. Such a diet sooner or later is apt to be followed by acid indigestion, with languor, flatulence, and constipation. In the majority of cases there will be either rheumatic or neuralgic pains, especially if there are very large deposits of uric acid and oxalate of lime. The conversion of farinaceous substances into glycogen and the emulsifying of fats is at once arrested; fermentation results, and lactic, butyric, and other abnormal acids are formed. The absorption of these acids brings about a pathological condition of the blood characterized by diminished alkalescence. This change in the blood has probably an irrritating effect on the liver and brain that tends to prolong and aggravate the lithemic state.

It has been suggested by Draper that there exists a close relation between the functional disturbance of the liver in lithemia and in glycosuria. The marked nervous disturbances attendant upon lithemia would clearly indicate that the cerebro-spinal system was subjected to considerable irritation. But whether irritation of the floor of the fourth ventricle has any influence in the production of uric acid or not is a question belonging to the realm of speculation.

The habitual ingestion of beer and wine has always been recognized as a potent cause of lithemia and oxaluria. Fermented liquors are absorbed and carried to the liver in almost their full strength. When brought in contact with the hepatic cells the alcohol acts as an irritant, congestion and functional impairment result, and metabolism is retarded. Besides the deleterious influence of alcohol on the liver, wines and beers contain acids. These acids when absorbed tend directly to reduce the alkalinity of the blood and to the precipitation of uric acid. Again, copious ingestion of spirituous liquors will in time impair the digestive power, and the acid indigestion produced is a third and potent influence in the production of lithemia.

Murchison is at great pains to enumerate the admissible and inadmissible liquors, but concludes it were better to prohibit all spirituous drinks. As a compromise he would allow claret and dilute spirit. My experience has been that the allowance of any kind of liquor, however mild, is followed by relapse, and disappointment to both patient and physician. Many cases continue incorrigible because liquors are clandestinely taken and it is impossible to enforce prohibitive measures. Were any proof needed to support a generally accepted belief, the results obtained in these cases, when it is possible to secure abstinence, would be sufficiently convincing.

The following cases may illustrate the effect of alcoholic liquors both in causing and aggravating lithemia:

CASE I.—L. H., sixty years of age. When I was called to see the patient he was in a paroxysm of pain presumably due to the passage of concretions along the line of the ureters. After relieving the pain an analysis of the urine was made. It was found high-colored and intensely acid, containing large quantities of rosette crystals of uric acid. Inquiry revealed the fact that for fifteen years of his life the patient had been in the habit of taking a cocktail before breakfast, on the presumption that digestion was thereby improved. There was a history of muscular rheumatism, especially lumbago, and of periods of mental depression or nervous irritability. After putting the patient upon a diet largely nitrogenous in character and obtaining his promise to abstain from all kinds of malt and spirituous liquors, a few aids to digestion proved sufficient to entirely correct the lithemic condition.

CASE II.—J. C., twenty-eight years of age, complained of acid indigestion, languor, flatulence, and muscular rheumatism. As commonly happens in such cases, he insisted that "his kidneys were out of order" and "had fears of incipient Bright's disease." His diet was mixed and so were his drinks. He found beer, ale, whiskey, and wine equally potable, so long as the source was copious. He never went on sprees, and assured me that he was quite temperate, rarely taking more than eight or ten glasses of beer, with a glass of wine or whiskey, during the twenty-four hours. Analysis of the urine showed great quantities of calcium oxalate, uric acid and débris, with some pus-cells, leucocytes, and epithelium from vesical irritation. The patient was induced to live a more quiet, regular, and temperate life; the necessary restrictions in diet were recommended, and digestive ferments and antiseptics were exhibited to promote complete conversion of the food. The result was a speedy abolition of the symptoms of lithemia and a return to health and comfort. But the patient, from time to time, proved intolerant of restriction, and every indulgence was followed by a relapse; so that he was ultimately dismissed.

CASE III was a gentleman sent to Colorado for pulmonary hemorrhage. On consulting a physician here, he was advised to drink all the whiskey and beer his constitution would bear. After some months the patient began to develop symptoms of lithemia. Not realizing that liquors were aggravating his trouble, he continued their use for over a year, when his discomfort obliged him to seek relief.

He was advised to abstain from all stimulants. This task was no easy matter for one accustomed to copious daily stimulation. He soon became entirely free from the lumbago, lassitude, and mental depression that had made him so wretched. From time to time, however, thinking himself entirely recovered, he would relax his care in respect of drinking, and would at once have a return of oxaluria and its attendant symptoms. Later on, when for social reasons he was induced to indulge his taste even lightly for an evening, he would come to me complaining bitterly of the penalty he had to pay.

It is but fair to say that it is not common to meet with cases as sensitive to alcohol as the one last cited; yet the difference between this case and the others mentioned is only one of degree.

In male subjects, as we have seen, lithemia is often traceable to indulgence in spirituous liquors; but when this condition occurs in middle-aged and elderly women it is generally due to sedentary habits and mal-nutrition. The lack of fresh air and exercise is attended with lowered oxidation, constipation, and hepatic engorgement, thus affording favorable conditions for the formation of uric acid. No class of cases is more difficult to treat than these. The working-cells of the liver must be fed by pure blood in order to maintain their activity and fulfil their function of converting proteid material. Fresh air is required to supply pure oxygen to the vitiated blood, and exercise is necessary to send that blood briskly coursing through the portal system. Frequently the physician's ingenuity is taxed to the utmost to secure implicit obedience in regard to diet and habits of life.

The influence of nervous strain has much to do with the arrest of the normal gastric and hepatic functions. I have met with many cases in which mental anxiety was clearly responsible for chronic mal-nutrition and lowered oxidation. It is true that among such cases acid fermentation from improper diet is frequently met with; but clinical evidence is abundant in support of the view that nervous irritability is more frequently the cause of lithemia than its concomitant. It may safely be predicted that the many puzzling phenomena seen in functional disease of the liver will never be elucidated until we have a clear comprehension of the innervation of that organ and its central connection.

Inherited dyscrasia has long been recognized as an influence predisposing to lithemia and gout. It is questionable just how much derangement may be ascribed to inherited functional deficiency; but many cases present themselves for treatment in which a rheumatic, gouty, or lithemic diathesis has been apparent along the line of hereditary descent.

The question of *prognosis* in milder cases of lithemia scarcely calls for serious consideration.

If a few precautions in regard to diet, exercise, and open-air life are closely observed, the functional difficulty will correct itself. But the history of the average lithemic patient is one of oft-repeated relapses from periods of improvement. To secure happy and permanent results requires long and persistent adherence to principles of regimen and treatment. Muscular and articular rheumatism, nervous irritability, insomnia, and mild melancholia, the sequelæ of lithemia, make it a disease of no trifling significance. A few resist all ordinary means of treat-

ment, and in such cases we must exert constant vigilance to arrest the onward progress toward gout or calculus. No pronounced precipitation of uric acid or oxalate of calcium can occur for an indefinite time without setting up catarrhal inflammation in the renal pelvis or bladder. When once this catarrh becomes excessive, vesical calculus will result from decomposition of the urine and phosphatic incrustations.

Briefly stated, the *treatment* of lithemia consists in the removal of its causes, affording the liver an opportunity to accomplish its metabolic function unimpeded; but the successful management of this disease involves strict adherence to detail.

Attention to diet is of paramount importance. Discriminating care is necessary in the choice of food easy of digestion and least liable to fermentative decomposition. Starches, fats, and sugars stand first on the list of foods to be avoided. Potatoes, corn, rice, radishes, cabbage, and fibrous vegetables are inadmissible in the average case of lithemia. In severe cases fruits, and even bread, may have to be limited. Highly acid fruits, such as strawberries, blackberries, oranges, and occasionally apples, are arrested in digestion, and the liver is irritated by the products of decomposition.

Fat, in the form of lard or oil, proves exceptionally pernicious; even butter must be limited in quantity. It should be emphasized that no food for the lithemic subject should be fried or prepared by the aid of any fat.

All sweets, whether in the form of sugars, syrup, candies, or pastries, are especially liable to early fermentation. Sugars in excess overload the hepatic cells and impair the glycogenic power of the liver, arresting the complete conversion of nitrogenous products. It is not at all uncommon for a patient suffering from lithemia to appear asking treatment for acid dyspepsia, pyrosis, flatulence, and lumbago, with the statement that "all he has been able to eat with any zest is pancakes and maple syrup." Would it be possible, in the whole category of dietetics, to select a combination of substances more potent in the production of fermentation and dyspepsia?

It should be understood that the foods mentioned in the foregoing list may be considered allowable only upon careful consideration of the case in hand. No empirical statement can be laid down that will apply *in toto* to every case.

Among the foods that may be allowed the lithemic subject are eggs, broiled meats, fish, oysters, game, and tender fresh vegetables. Milk, cocoa, and abundance of pure water should be taken as drinks; but at no time should any amount of liquid be taken with solid food at meals. Few influences operate more harmfully in the production of acid dyspepsia than the common habit of drinking freely at meals. The gastric juice is thus diluted and rendered powerless to attack the solid ingesta. The free use of water an hour before or two hours after meals contributes greatly to the relief of a torpid liver, and flushes out the kidneys in a simple but effective way not accomplished by any other means.

It is important that the quantity as well as the quality of food should receive attention. The gastric and hepatic functions are often impaired by over-feeding, when a smaller amount of ingesta would be easily appropriated.

Finally, it will be necessary to prohibit every form of alcoholic stimulants. I have never known a case of lithemia that did not suffer immediate relapse on the return to alcoholic drinks, even in small quantities. No exception can be made to the rule of exclusion, unless it might be light claret or gin, and both of these liquors have so often deceived me that I have lost confidence in the authority that has allowed even this concession.

Next to care in diet, systematic outdoor exercise and open-air recreation figure in importance in the permanent cure of lithemia. Several months in the woods or at the seashore often prove most effective in obstinate cases. No exercise should be engaged in so violently as to rob the centers of oxidation of their required amount of blood. Exercise carried to exhaustion is more harmful than a sedentary life.

In most cases of lithemia it will be found necessary to employ some aid to digestion to insure the complete conversion of food.

The administration of nux vomica, bismuth, and soda before meals, and pure pepsin with dilute nitro-hydrochloric acid after meals, will, in the majority of cases, prove sufficient. Nitro-hydrochloric acid may do more harm than good when exhibited in cases in which there is an excessive amount of native acid in the stomach, or where for any reason it passes rapidly into the circulation, thereby reducing the alkalescence of the blood. As an oxidizing agent experience shows it has no superior, and it is supposed to have a special action on the liver.

Alkalies are often administered to correct a lithemic condition, but their excessive use is erroneous. The continued administration of alkaline salts usually lowers the gastric tone to such a degree as to set up the very conditions that induce lithemia.

Sodium phosphate proves a valuable saline in cases in which the liver is primarily at fault.

Chloride of ammonium acts happily when there is continued engorgement of the portal circulation.

Salicylate of sodium has been highly spoken of by certain German authorities, but its unhappy influence on a stomach already weakened by irritants makes it a doubtful drug in lithemia.

Perhaps no medicinal agents act more satisfactorily in stimulating the liver than the various saline

waters, such as those of Vichy, Ems, Buffalo Lithia, and our own Manitou. In the majority of instances the chief benefit derived is from the thorough washing out of the débris of oxidation from the system. The chemical influence is largely of secondary importance.

Experiments have shown that in many cases equally good results have been obtained from drinking copiously of simple water. All mineral waters act best when taken warm, and while fasting. In chronic lithemic subjects, when the formation of stone in the bladder is to be apprehended, the continued use of selected mineral waters as a prophylactic is excellent practice.

A CASE OF PRIMARY LUPUS OF THE PHARYNX.

BY JONATHAN WRIGHT, M.D.,
OF BROOKLYN, N. Y.

THE recent flurry among the miracle-seeking members of our profession, caused by Koch's premature announcement, has been at least productive of the publication of records of cases of lupus.

For a number of years it was thought that lupus of the mucous membrane of the nose and mouth was always an extension, by continuity or contiguity, of a similar growth on the skin. In the last seven or eight years, however, reports of carefully studied cases have made it probable that a very large proportion (from 20 to 45 per cent.) of all cases of facial lupus really begin in the contiguous mucous membranes.[1] The painless character of the growth is an explanation of this former oversight on the part of clinical observers. Fifteen years ago, Von Ziemssen[2] rightly prophesied, and the prophecy was echoed by Lefferts,[3] that a more careful search would reveal many cases of lupus of the throat. Lennox Browne[4] has lately said that in a skin hospital he saw in a few weeks more cases of lupus of the nose and throat than he had previously seen in a throat-practice of twenty years. For a number of years nearly all the standard works and monographs have referred to the case mentioned by Von Ziemssen in 1876 as the only one reported in which the disease was primary and confined to the larynx. This statement is certainly erroneous, since Haslund,[5] in 1883, reported a case of lupus confined to the larynx, while Obertüschen[6] recorded a case in which the lupus first appeared in the larynx of an otherwise perfectly healthy individual; a year and a half later skin-lupus appeared on the nose, the laryngeal lesion having healed. Others more or less doubtful have been reported. Primary lupus of the tongue, though almost as rare as that of the larynx, has been observed by Fairlie Clarke[1] and Leloir.[2] Primary lupus of the soft palate and pharynx is more common, while the nasal mucous membrane is very frequently the starting-place of facial lupus. Of course, many of these cases are open to justifiable doubt in regard to the diagnosis; but in the light of the more recent publications of clinical experience one should hardly be satisfied with the declaration of Lefferts (*loc. cit.*), Störk,[3] and others, that they would decline to make a diagnosis of lupus of the throat without coëxisting skin-lupus. Such isolated disease, as stated above, is by no means rare, Chiari and Riehl,[4] as long ago as 1883, having reported thirty-eight cases of lupus of the larynx. Many more have been reported since.

The following case of primary lupus of the pharynx is, however, the only one that has ever come under my observation. It must be remembered that lupus is one of the diseases that is, judging from literature, much more common in Europe than in this country.

F. F., male, seventeen years of age, an iron-worker, of German parentage, came to the Demilt Dispensary in May, 1890, because his mother, on looking into his throat, had discovered its abnormal appearance. There was no record of hereditary tuberculosis, cancer, or syphilis. The patient himself gave no direct or indirect history of acquired syphilis. About six months previously he began to notice that his throat was dry, his nose was stopped, he breathed through his mouth, and a tickling in his throat made him cough a little. He was slightly deaf on the left side. Three or four months ago he had some lumps removed from the left side of his neck. It was impossible to ascertain whether the appearance of the lumps followed or preceded the throat symptoms, which were exceedingly slight, there being no dysphagia and but little discomfort.

The boy's appetite and general health were good. His appearance was robust; with the exception of the scar at the angle of the jaw on the left side, where enlarged glands could still be indefinitely felt, he presented no external evidence of tuberculous disease. There was no skin-lupus. A physical examination of the chest revealed nothing abnormal. The fauces were seen to be thickened and covered with numerous tiny, shining elevations of the surface. There was some congestion, but no ulceration. The thickening was more marked on the left side. The uvula was enormously hypertrophied, being nearly as large as the distal phalanx of the middle finger. It also was sprinkled with little surface elevations, and near the tip this appearance was exaggerated to such a degree as to be called fungous.

[1] Vide Bender's convincing articles, Vierteljahresschrift für Derm. und Syph., 1888, 15, p. 892, et alidem.
[2] Amer. transl. Encycl., 1876, vol. v, p. 852.
[3] Amer. Journ. Med. Sciences, April, 1878, vol. lxxv.
[4] Diseases of the Throat, 3d ed., p. 426.
[5] Vierteljahressch. für Derm. und Syph., 1883, 10, p. 471.
[6] Centralblatt für klin. Med., 1883, No. 38, p. 609.

[1] Trans. London Path. Soc., 1876, No. 27, p. 148.
[2] Annales de Dermatol. et de Syph., 2d series, 1889, 10, p. 849.
[3] Krankheiten des Kehlkopfes, 1880, p. 362.
[4] Vierteljahresschrift für Derm. und Syph., 9, 182, p. 661.

There was some reddening around the edges of the infiltrated area on the soft palate, but the tubercles themselves were pale and shining. There was very little secretion. There was some linear cicatricial tissue on the posterior pharyngeal wall. There was no pain on swallowing, or on manipulation. The patient complained only of a clogged feeling in the throat. There was some hypertrophy of the nasal mucous membrane, and some deviation of the septum to the left. It was thought that on the right side a few shining points could be seen on the inferior turbinated bone far back, but at that time this was not satisfactorily established.

After exclusion of syphilis by a thorough but fruitless course of potassium iodide and mercury, the diagnosis of lupus was made. With the cold snare the whole uvula was amputated as close to the velum as possible. Vigorous applications of pure lactic acid were made. The infiltration seemed to subside somewhat, and the patient being relieved of the symptoms that annoyed him, ceased to attend.

A microscopic examination of the excised uvula proved conclusively that we had to deal with a tuberculous growth, notwithstanding that it was impossible to demonstrate the presence of the tubercle-bacillus in the ten or fifteen sections stained for it.

Gottstein,[1] in his excellent work, gives a good description of the microscopic appearances in a case of lupus of the uvula, and a reference to his account will give an almost exact picture of my case. Sections were submitted independently to several experienced microscopists, who all agreed as to their tuberculous nature. Several laryngologists saw the case, and the diagnosis of lupus was undisputed.[2]

On the arrival in New York of Koch's fluid—tuberculin—the patient was hunted up and induced to place himself under treatment. Before the inoculations I find in my history-book the following note:

"At the base of the amputated uvula on the anterior inferior edge of the soft palate, there is a rosette of small pin-head, pale, shining tubercles. Here and there a few may be seen along the arch of the soft palate and on the anterior pillar on the left side. The latter is fast to the tonsil, which is hypertrophied. On the posterior pillar on the right side there is a suspicious-looking spot. The epiglottis is thickened, but it is impossible to determine the presence of the little tubercles seen elsewhere; otherwise the larynx is normal in appearance. The patient having had some nose-bleed from the left side, careful examination reveals a little patch of tiny tubercles about the middle of the convex surface of both the middle and inferior turbinated bones on that side. No true ulceration and no destruction of tissue, no breaking down of the epithelium, can be discovered anywhere in the nose or throat."

The patient at that time (December 23d) was shown at the laryngological section of the Academy of Medicine. On December 24, 1890, the patient received his first inoculation with 0.001 of tuberculin, followed at the usual intervals by two or three others. The reaction was characteristic, the fever reaching 101° F., with malaise, etc. The little tubercles that before had been pale-red and shining became white at their centers and looked as if they would soon break down. This, of course, made them much more noticeable, but I am unable to say whether, as Virchow has claimed, new ones were formed, or whether the previously-existing but unnoticeable ones were accentuated and made more evident. There was, of course, a great increase in the congestion; the reddened areola was very marked, and the patient complained of his throat being sore.

He had evidently satisfied himself concerning the effect of the tuberculin and escaped from the hospital. All subsequent attempts to induce him to return were of no avail. In the light of our present experience the folly of his conduct will not appear so glaring as it then did.

The differential diagnosis of syphilis, lupus, and tuberculosis of the mucous membranes—"the three grand processes," as some Frenchman calls them—often presents insurmountable difficulties, even to the most trained and experienced observer, yet typical cases of each are unhesitatingly recognized by the clinician, so unmistakable are their characteristics. The majority of writers claim that there are more cases on the diagnostic border-line between syphilis and lupus than on that between tuberculosis and lupus. I have seen one case of syphilis in which, on the aryteno-epiglottic fold, there was an appearance almost identical with that described in the case here reported—the same absence of ulceration, the same shining, tiny tubercles. Other manifestations, however, and the result of treatment proved the specific nature of the case.

Clinically, tuberculosis of the throat is a painful, ulcerating, non-cicatrizing affection, almost always combined with visceral tuberculosis, and accompanied by signs of systemic enfeeblement and marked decline of the general health. Lupus, on the contrary, is comparatively painless, does not always tend to the formation of true ulcers, and as it advances leaves cicatricial tissue behind it. As a rule, the general health is not affected. It is a matter of dispute whether there is any great preponderance of visceral tuberculosis among its victims, though the weight of evidence, at least in a slight degree, affirms the fact. In considering this question, however, it is always well to remember that about one-third of *all* autopsies show the presence of active or latent tuberculosis, or the evidence of

[1] Krankheiten des Kehlkopfes, 3d ed., p. 277.

[2] I have also in my possession sections of several specimens of syphilitic disease of the uvula and soft palate, and the contrast between the two forms of inflammation in this locality is striking and interesting.

previous tuberculosis. Moreover, although lupus may be followed by tuberculosis in one-half of the instances, it has never been shown that lupus is any more liable to attack the skin or mucous membranes of a consumptive than to attack those of a healthy person.

The writer does not wish to insist on the non-identity of lupus and tuberculosis. He wishes, however, to insist on the Scotch verdict—"not proven." Clinically, we all know the difference in the pictures summoned to the mind of the laryngologist by the words "lupus" and "tuberculosis." The order of frequency of the occurrence of tuberculosis in the air-passages—and it is of this locality only that the writer pretends to speak—is lungs, larynx, pharynx, nose; while of lupus, it is nose, pharynx, larynx—and lungs never (?).

Histologically, we know how trifling is the difference. The greater vascularity and the fewer areas of coagulation-necrosis, the fewer giant-cells in lupus, are merely matters of degree. The difference in the number of bacilli found in the two processes is, however, too striking not to be significant. In Dr. Rice's recent admirable article[1] on lupus of the throat, there is one point that arrests the attention of any one conversant with the subject, and that is the finding of a considerable number of bacilli in the secretions from the lupus-patch on the face. Through his courtesy I had the privilege of seeing his case, in which the throat lesion differed from that in my case only in the stage of the process and in the location.

The difficulty of demonstrating the tubercle-bacilli in the lupus-tissue is great, it being necessary, usually, to stain many sections before even one bacillus can be made sure of. While I have made no *exhaustive* search for the fact, I have been unable to find in very extensive references *any* record of the bacillus tuberculosis having been found in the secretions of true lupus.[2] L. V. Krynski,[3] however, described a case of facial lupus in the discharges of which he could, as usual, find no tubercle-bacilli; after the first injection of tuberculin, none; after the second, two; after the third injection, countless numbers. After later injections, none were found, except after the fifth, when two were noted. Dr. Rice's paper does not record the relation of the bacterial examination to the time of inoculation.

In the early days of bacteriology the new school had its strongest claim to the belief and confidence of the medical world in the irrefutability of the evidence it presented. Presumptive evidence was ruled out with scorn. We are now asked to accept the tubercle-bacillus as the chief, if not the sole factor in the etiology of lupus. No one has ever produced, no one has ever claimed to be able to produce lupus by inoculation of the tubercle-bacillus. Tuberculosis is frequently, but not constantly, produced by the inoculation of lupus material; lupus itself has never been reproduced by inoculation. Thus we see that the bacteriological evidence of the identity of the etiology of the two processes is far from satisfactory. We can only suspect that lupus is a variation of tuberculosis. If it should ever be *proved* to be, the term lupus must still be used to indicate a distinct clinical condition.

To ask the observer of diseases of the throat to believe that the two processes are identical in their etiology, is to ask him to lay aside the use of his reason and to disregard the evidence of his senses. He may, however, be disposed to admit the probability of the identity of certain factors in the etiology of each, for disease is not a plant, nor is it an abnormal agglomeration of cells in a certain constant order of arrangement; it is "a derangement of any of the vital functions" (Webster). Pathological changes are the results of disease, not the disease itself.

It is perfectly within the range of possibilities, and it is daily becoming more probable, that the same microörganism may cause more diseases than one. It is perfectly certain that we hardly have a disease known to man that is due to any one cause. It is natural for man to seek a simplicity of relation between cause and effect. Such simplicity does not exist between the manifestations, the lesions, and the etiology of disease. Classification of disease is the means, not the end, of its study; and at present no classification is possible that is satisfactory, and it is futile for medical men to try to drag certain clinical manifestations of disease into line with the minute pathological changes with which they are associated. Systems and rules are the crutches with which the medical novice learns to walk, but the sooner he throws them aside when he is on his feet, the less he is encumbered.

[1] New York Med. Record, April 18, 1891.

[2] For an excellent review of this subject, covering in a general way the whole ground, vide Rev. des Sciences Médicales, Avril 15, 1891, No. 74, p. 669.

[3] Deutsche med. Wochenschr., Mai 28, 1891, p. 745.

PHARYNGO-MYCOSIS.[1]

BY HENRY BIXBY HEMENWAY, A.M., M.D.,
OF EVANSTON, ILL.

PHARYNGO-MYCOSIS is often a very annoying trouble for the general practitioner, by whom it is generally confused with other troubles, especially with follicular pharyngitis. The mild nature of the disorder does not compel a close examination, and even specialists are frequently ignorant of its nature.

[1] Abstract of paper read before the Chicago Medical Society, December 7, 1891.

There is reason, however, for believing that it is far more common than is generally believed. Most cases are treated by general practitioners.

There are many forms of pharyngo-mycosis. That due to the growth of the oïdium albicans (which has been more recently identified with the mycoderma vini and saccharomyces albicans) has long been known, and generally resides in the mouth. Nigrities linguæ resides especially on the tongue, and it is probable that when sarcinæ are found in the pharynx they are the secondary result of a like growth in the stomach. Other cases of mycosis in the pharynx have been ascribed to the growth of aspergillus fumigatus, actinomyces, leptothrix buccalis, and bacillus fasciculatus. It is more especially to the last two forms mentioned that this article applies.

But few references are found in literature to the subject. A careful search failed to discover more than four articles in American medical journals. Most articles upon the subject have appeared in the French and German journals. England has added almost nothing to our knowledge, and most textbooks are silent upon the subject. This is especially remarkable when we remember that the first article on the subject was published in 1873, and that the affection is extremely difficult of treatment, except by surgical means.

The etiology of pharyngo-mycosis is very uncertain. Catarrhal inflammation is a predisposing cause. Mouth-breathing brings the air in direct contact with the tonsils, and favors the implantation of the microphyte. Hypertrophied tonsils favor its development. Damp, unhealthy surroundings are predisposing causes. It is more common in females than in males. It has been found in the vicinity of diphtheria. The form of the bacillus suggests that it is perhaps closely related to forms found in stagnant water. Lennox Browne mentions unhealthy skin as a cause. Dental caries is also mentioned as a cause, favoring the development of leptothrix.

Pharyngo-mycosis is essentially a chronic affection, subject to exacerbations and abatements when left to itself. The subjective symptoms vary from a very slight tickling sensation to a decided feeling of obstruction. Sometimes nothing is felt. At other times the local irritation produces a local inflammation, accompanied by the usual symptoms of tonsillitis or pharyngitis, such as pain and fever. The irritation of the fungus frequently causes a hacking cough, sometimes accompanied with vomiting. The voice is sometimes altered. If constitutional symptoms are present they are secondary. Asthma is sometimes present.

Objectively we see spots upon the pharyngeal wall or around the circumvallate papillæ of the tongue that vary in color from white to cream or yellow. When circumscribed upon the tonsils they are seen to grow from the crypts. They are very tenacious, not easily broken off, and when removed they are rapidly reproduced in the same locality, sometimes within twenty-four hours. The growth is generally in the form of filaments or tufts; sometimes it is confluent in the form of a membrane. Normally the mucous membrane around the fungus is natural in color.

Mycosis is differentiated from diphtheria by its chronic nature; by less tendency for the fungus to spread; by absence of fever and symptoms of systemic disturbance (except when accompanied by tonsillitis); by absence of the diphtheritic odor; by absence of pain, and by the form of the fungus. When in the membranoid form, it does not come off as a membrane, but breaks in pieces. When removed it sometimes leaves bleeding-spots, but the mucous membrane is not so much denuded as in diphtheria.

In follicular pharyngitis the contents of the follicles are easily expressed. The calcareous concretions sometimes found in chronic follicular amygdalitis often project from the crypts, but they are also easily expressed. Though in follicular inflammations the accumulations frequently *contain* leptothrix threads, they are not *composed* of the filaments.

The filaments of pharyngo-mycosis are easily seen, often without staining, with an amplification of 600 diameters. They are brought clearly to view with an aqueous solution of methyl-blue. Anilin-red, or an aqueous solution of potasium iodide and iodine, also stain well. In the specimens examined by the writer, the filaments were arranged in bundles or fascicles, which sometimes branched, though the filaments themselves did not branch. In other cases the filaments were not in bundles, though lying parallel; sometimes they were arranged in the form of a network. The filaments are generally found more or less intermixed with fine granular matter, which is frequently arranged in lines from which the bacilli generally project at an obtuse angle. The filaments or bacilli are normally straight, or nearly so, though they may be found flexed almost into the form of an ellipse.

The writer was unable to find a description of Sadebeck's bacillus fasciculatus, but since he found the bacillus so frequently in fascicles he regarded his specimens as of that species. He frequently found the leptothrix filaments, but the constant form was not leptothrix. Leptothrix buccalis filaments are from 0.7 to 1 μ broad, and the cells measured by the writer were seldom over 3 μ long. The bacillus of mycosis, however, varied in thickness from 0.4 to 0.56 μ, generally about 5 μ long, but sometimes 16 μ in length. The bacilli do not show a tendency

to form long threads, as seen in the leptothrix. There are reasons for suspecting that the bacilli have some power of locomotion.

A large majority of observers have seemed to agree that leptothrix is the cause of pharyngo-mycosis. So far, however, as found by the writer, their descriptions are not those of leptothrix. Leptothrix is common, especially upon the gums; but mycosis is rare, and not found on the gums. It would be strange if leptothrix were not frequently found with mycosis, but its presence does not prove that the growth is the result of leptothrix.

Prognosis. The affection is generally more troublesome than dangerous. The fungus is slowly destructive of the tissues on which it grows. It may be implanted on the Schneiderian membrane or lodged in the lungs. In the latter location it might prove serious. Spontaneous cures sometimes occur. In other cases the disease is extremely chronic. No treatment is satisfactory except the use of the galvano-cautery. With few exceptions, and those doubtful, drugs have been absolutely useless. The bacilli penetrate deeply into the tissues, and the treatment must be correspondingly energetic. Since they seem to thrive best in an acid medium, the writer recommends the application of the negative electrode, with a large external positive electrode.

This paper is based upon a case that the writer observed for five months, and which had been called one of follicular pharyngitis. Antiseptics, caustics and pepsin were all unable to destroy the microphyte. Nothing was heard from the patient after the removal of the growth by the galvano-cautery.

THE AMEBA COLI.

BY JOHN H. RHEIN, M D.,
OF PHILADELPHIA.

As the relation between the ameba coli and dysentery is yet a matter of doubt, the following observations may be added to the accumulating testimony on the subject.

The question grows more complex when it is considered that the ameba has been found in the stools of children with catarrhal diarrhea, in the urine of phthisical patients, and in the pus of abscesses of the liver; while in a recent epidemic of dysentery in the Norristown Insane Asylum, careful examination of the stools failed to find in any case the ameba coli.

The theories as to the nature of this organism that make it an intestinal epithelial cell or an especially well-nourished leucocyte have thus far scarcely been maintained.

In a series of fifteen cases of dysentery that have come under my observation amid the same climatic and hygienic conditions, the ameba was readily found in the stools of all. The examinations were made with the aid of one-twelfth oil-immersion and one-fifth lenses.

The organisms varied in size from two to several times that of the white blood-corpuscles, and contained one or more vacuoles and some amorphous granular matter. Their outline was faint and indistinct, so that at first the organism was not easily distinguished.

When at rest the organisms appeared circular, or nearly so, unless they had died in the act of protruding a pseudopod, an event of not infrequent occurrence.

The vacuole varied in size. In some amebæ it was found to be small, in others so large as to occupy the greater part of the organism. (Fig. II, *b.*)

There was no constancy in the amount of granular matter, as indicated in the accompanying illustrations. When small in quantity it was found aggregated at the periphery of the ameba; if the amount was large, it occupied the entire organism, together with the vacuole. The motion was relatively slow or rapid, and included a slow, irregular movement of the whole ameba, a wave-like movement of the contour, and a dancing of the granular matter.

Fig. I represents the changes in two amebæ that took place in the course of a few minutes, the stool having been examined an hour after its evacuation. It is to be noticed that the granular matter changed position with each wave-like motion, the wave beginning at one side of the body and ending at the other in the extrusion of a pseudopod, each movement occupying about three-quarters of a second. These were rhythmically repeated a number of times. (Fig. I, B.)

The movements, when slow, seemed to be associated with an entire change in the shape of the organism, and in two cases there appeared to be a cycle of motion. The original shape being circular, or nearly so, there followed a variety of forms, so that finally the original shape was resumed. (Fig. I, A.)

The change in position occasioned by the currents in the fluid of the specimen examined must not be mistaken (as it may easily be) for this movement.

The motion seen in the granular matter was very rapid, and consisted of a dancing of the small particles, which soon established a current around the vacuole, so that the granules were carried around in the current, making repeated excursions. In one instance, though the observation was continued for a long time, no change in the contour of the ameba was discovered.

The pseudopods resembled small corpuscles attached to the ameba, and when, as is often the

case, the granular matter extends to the base of a pseudopod, there is an appearance of two distinct bodies. (Fig. II, *a*.) The pseudopods varied in number, there being usually only one or two, but, as was once seen, there were five. (Fig. II, *c*.)

Fig. I

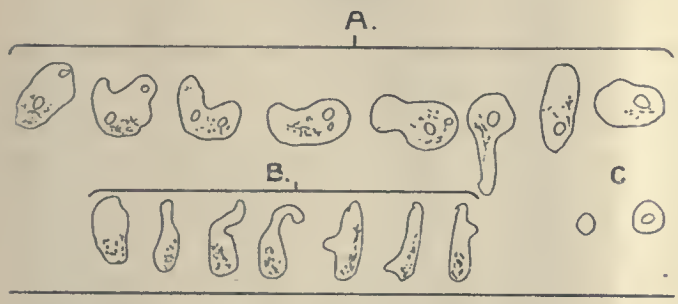
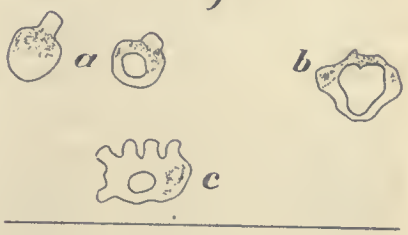


Fig. II.



In a few cases the ameba appeared to be motionless, though every precaution was taken to preserve life, and the observations were carefully made. There was some difficulty in preserving the vitality of the ameba sufficiently long to observe its movements, and it became necessary to use means to keep the stools at the body-heat, to use warmed slides and cover-glasses, or a warm stage. Even when these precautions were taken the organisms continued to live only for from ten minutes to two hours.

An attempt was made to stimulate the amebæ to movement after they had apparently died, and in one case five pseudopods were protruded, while in others some slight motion was occasioned, but the results were by no means constant. In two cases the cercomonas intestinalis was discovered in very active motion.

ORIGINAL LECTURE.

CHOREA IN PREGNANCY—PUERPERAL INSANITY—THE CARE OF THE UMBILICAL CORD—MAMMARY BINDERS—RECTO-VULVAR FISTULA—MAMMARY ACTIVITY AND MENSTRUATION IN THE NEWBORN—LUMBO-SACRAL KYPHOSIS, ETC. ETC.

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CHOREA IN PREGNANCY.

OUR first patient has, to a slight degree, the chorea of pregnancy. You observe the twitching of the right shoulder, of the head, and of the neck, as she sits before you. I question her about her condition, and her embarrassment, you see, increases; she squirms about on her chair, so that the choreic movements are somewhat masked, but you may still perceive them. The case is one of mild chorea in pregnancy. Even in this form it is a rare disease of pregnancy—I have seen but three cases.

In reply to my question, the woman tells me that for two years past she has had St. Vitus's dance, but not to such a degree as at present; that she had a bad attack of rheumatism three years ago, and that she knows nothing of her family history. These three points are always of interest in the study of the chorea of pregnancy. Heredity, preëxisting chorea, usually in childhood, and rheumatism are the three main etiological factors. The two other cases that I have seen were very much more marked than this. In both I was obliged to interrupt pregnancy late in its course. It should be remembered that there are two grades of chorea in pregnancy: one a mild, the other a severe and malignant disease in which the mortality is over 30 per cent. The mild cases, however, may grow progressively worse, and become malignant, so that whenever chorea occurs in pregnancy the woman must be carefully watched, in order that gestation may be interrupted in time, if the movements become so violent as to threaten exhaustion. In my first case of chorea in pregnancy, I managed to control the disease and even to diminish it until the last weeks of pregnancy, when, in spite of treatment, the movements became rapidly more constant and violent, and I induced labor. In the first few days of the puerperal state the chorea disappeared. This case had a very interesting history. As a child the girl had had chorea, but had been cured by competent medical attendance at that time. Three or four days after the illicit intercourse that resulted in impregnation the chorea reappeared. The other case that I have seen was in a girl who was at the same time insane, the chorea, however, by a few months antedating the insanity. She, too, had been illegitimately impregnated, but was afterward married to the father of her child, who then deserted her. This girl came of a neurotic family. She developed a type of insanity that I shall exhibit to you later in to-day's lecture. In her case I also interrupted pregnancy, not entirely on account of the chorea, but partly because she had a high grade of generally-contracted pelvis, and pyelitis also, so that, taking everything into consideration, I thought she would be better off if the pregnancy were terminated as soon as the viability of the child could be pretty well assured. Consequently, I induced labor about five weeks before term. The child did well, and the mother made a complete recovery. I accomplished a cure in her case;

I believe, by improving the condition of her blood. As in a large number of insanities in the childbearing woman, I found in her a very marked anemia. Under the prolonged use of iron and arsenic I increased the number of red blood-corpuscles from less than 3,000,000 to more than 5,000,000 in the cubic millimeter, and as the blood approached the normal the girl rather suddenly recovered her reason, the chorea having disappeared long before. This is the best medicinal treatment of which I know—the combined administration of iron and arsenic for the chorea of pregnancy. It cured one case, it held another case in check until the latter part of the pregnancy, and we learn the same lesson from the history of cases in the hands of other physicians. We shall, therefore, try it in the case now before us, and shall with interest watch its effects. This, I think, is the only treatment we shall have to employ. I do not believe that in the next two months the disease will assume so serious a nature as to demand interruption of pregnancy. The patient will, however, be carefully watched. I have, myself, never seen the truly malignant type of chorea in the pregnant woman, although one of my cases nearly approached it. Dr. Goodell, however, as you may perhaps remember, has seen a remarkable instance of this sort, and in his inimitable manner has described it. The woman in labor jerked and contorted her limbs and body with such violence that she spattered the walls of the room with her blood as high as a man's head, although she was delivered on a mattress upon the floor. She afterward died of exhaustion. That was a typical case of malignant chorea—a condition that, whenever possible, must be guarded against by the timely interruption of pregnancy.

PUERPERAL INSANITY.

The next patient has puerperal insanity—in connection with the study of chorea an interesting condition, because the two are sometimes associated. This woman is married, about thirty-seven years of age, has had four children, the last about a month ago. After the birth of the child before the last she was irritable, and at one time violent. Her family did not think her insane, however, and she remained at home, and after some weeks she recovered her normal state of mind. During the last three weeks her husband has had no work, and has pawned the household goods, one article after another, to obtain money for drink. The woman left her bed at the ordinary time and busied herself with her housework, according to the statements of her family manifesting no unusual mental symptoms, except "fits of temper," until a few days ago, when she began to have delusions and became violent. When she first entered the hospital it was not easy to detect the mental disorder, although the next day her insanity was very apparent. She started for the window, saying she wanted to go home, and was just prevented from jumping out. As you can see from her appearance, the woman's physical condition is bad. Her breasts furnish little nourishment for the child, which must therefore be fed artificially. As I now ask the patient a number of questions about herself and her family, you hear that her answers are clear and rational. It takes a close and continued observation of this woman to show her true condition. The only thing abnormal I notice now is the slowness with which she appears to understand my questions. There is a mental apathy or lethargy that, in a more pronounced degree, I have often seen in the insanities of the childbearing woman. There is in these cases a complete indifference to surrounding conditions and events. The lethargy is profound. One is reminded of the poetical picture of the lotus-eater. The slowness of perception is so great that, when one asks a question, before the purport of it has reached the woman's brain she forgets that she has been addressed. I happen to have seen eight cases of insanity as a result of the childbearing process—a large experience for an obstetrician, because they occur but once in about 400 childbirths. In these eight cases I have most frequently seen this peculiar mental state that I have seen under no other circumstances. I suppose a professional alienist would give it a proper name; I have been in the habit of calling it dementia. That term perhaps would not be allowed by the neurologist, but in default of a better I use it to distinguish it from melancholia.

In the study of a large number of women insane as the result of childbirth, it has been found that the maniacal type is the most common. But this conclusion is based mainly on the statistics of insane-asylums, to which maniacal cases are almost sure to go, while melancholic and demented women would more likely be kept at home. In my own experience, relatively small of course, I have seen mania in but 25 per cent. of the cases.

It is always interesting in these cases to investigate the causes, for there is almost always one to be found, and some of them should teach the physician a useful lesson. Dr. Fordyce Barker saw thirteen cases of obstetrical insanity in physicians' wives that he attributed mainly to the dread of parturition inspired by reading their husbands' books on midwifery. In one of my cases in hospital practice a violent mania broke out directly after the woman was informed by the resident physician, two weeks after labor, that the perineum was torn and must be stitched. I think there must be a predisposition to nervous break-down in individuals that develop insanity from comparatively slight causes. The lesson to be learned from such cases is to guard women of this character as far as possible from nervous shocks and strains, especially during pregnancy, recollecting that gestation adds immensely to the irritability and impressionability of the nervous system. In the majority of my cases the women were illegitimately impregnated, and brooded over their disgrace till they became insane, in two instances exhibiting a religious melancholia. In two cases the women were deserted by the men that married them. In another, the woman had lost an older child from diphtheria. There is always some exciting cause to be discovered. Fortunately, the prognosis of the disease is good. The women recover their reason in about two-thirds of the cases, and the death-rate is low. The fatal results are generally due to the sepsis that so often accompanies insanity after labor that it must be regarded as a cause, or less frequently as the result, of maniacal exhaustion.

THE CARE OF THE UMBILICAL CORD.

I wish next to give you a demonstration of the way to take care of the umbilical cord in a newly-born infant. Carelessness in this particular has brought about very

bad results. I myself have made five post-mortem examinations of infants dying from septicemia resulting from such carelessness. The old plan was to surround the cord with a greasy, very often dirty, rag, and to leave the dressing undisturbed till the cord had dropped off. As a result, the cord would undergo a process of putrefaction or moist gangrene, with the constant danger that poisonous germs might be swept into the general circulation through the umbilical vein or the hypogastric arteries. We can avoid this danger by a little care, just as we are able to prevent septicemia in our obstetric operations. Here is a typically healthy umbilical cord. It is dry, and black in color. There is here a dry gangrene, or mummification; we secure this result by dressing the cord antiseptically when the child is cleansed after its birth, and changing the dressing daily. In my own work I use salicylated cotton. A pledget is placed on the abdomen above the umbilicus, on which the cord is laid. Over the cord is laid another pledget, and the whole is held in place by an abdominal binder of soft flannel. Should there be some little putrefaction in spite of these precautions, we can neutralize its effects by dusting the cord with an antiseptic powder, the best being starch and salicylic acid, five parts to one. It is not usually realized by the general practitioner that septicemia in the newly-born baby is common. In fact, to the general practitioner the whole pathology of early infancy is often most obscure. If the child dies in the first week or two, a death-certificate is given with marasmus or inanition as the cause of death—indefinite terms that cover a vast multitude of interesting conditions.

MAMMARY BINDERS.

I have next to demonstrate to you a matter seemingly trivial, but in truth of considerable importance. It is a very common thing to see an exaggerated engorgement of the mammary glands when milk-secretion is first established. The consequent distention and swelling of the breasts gives the woman pain and exposes her to the danger of mammary inflammation, and possibly of suppuration. In this connection it is interesting to recall the steps by which we have reached our present knowledge of the formation of mammary abscesses. It was formerly thought that mammary abscesses came from "a caked breast." But when the bacteriologist demonstrated the true pathology of wound-infection there arose an ever-increasing class of physicians that believed mammary abscesses to be the result of an infected nipple. Later investigations, however, have shown that there was a good deal of truth in the old idea. There *is* a mammary abscess that results from the invasion of the glands by staphylococci from the deeper lactiferous ducts. For this to occur, however, it is necessary that the resisting power of the cells in this situation should be much reduced, and it is the great engorgement of the glands with blood and milk that thus paves the way for infection. There are two causes of mammary abscesses: the first, an infection of cracks and fissures in the nipple; the second, a reduction of the vitality of the epithelial cells deep within the breast, and their subsequent invasion by staphylococci. It is the old story of the gold and silver shield over again, to which we find so many analogies in medical disputes. A mammary abscess is, therefore, to be avoided by preventing fissures in the nipples, or by keeping these clean should they develop, and by preventing too great engorgement of the glands. The latter object is attained by the use of a mammary binder, and by the frequent evacuation of the breasts. On three successive patients I propose to show you some of the mammary binders that are in common use. I first exhibit one that I must unreservedly condemn. In this institution, however, it has obtained a firm hold. You see that it is a piece of unbleached muslin, wide enough to reach from the axillæ to the false ribs, and long enough to surround the chest, with two holes for the nipples. The single advantage of this binder is that the woman can nurse the child without the necessity of removing the binder. It has the serious disadvantage that the nipples, being the only parts of the breasts free from pressure, swell, become edematous, and crack. The mammary binders that I have found most useful are the Richardson binder, and the Murphy binder, devised by Miss Murphy, of the New York Maternity.

The binder of Richardson requires practice for its proper application. When properly applied, it is the best-looking binder that I have seen. I use it in one of the hospitals over which I have control, and the nurses there are skilful in adjusting it. In the hands of one unaccustomed to its use, the chances are that it will not be comfortable. This binder consists of a T-bandage folded and held by a safety-pin in the shape of a Y, the two arms of the Y surrounding the glands, and the single arm passing under the woman's back. In this way we get pressure from above and below, and obtain a firm and even support with comfort to the woman. You can see the effect of this mammary binder on the woman before you; you see how efficiently the binder must prevent engorgement; under its pressure the milk is running out of the breasts.

On another patient I show you the so-called Murphy binder. It is a solid piece of unbleached muslin with arm-holes, and a neck-hole V-shaped in front. This is undoubtedly the most generally convenient form of mammary binder. It can be made by any seamstress, and can be applied without any special skill. It compresses the breasts in all directions, squeezing them close together, and thus preventing engorgement. Had this woman well-developed mammary glands, you would see that they would be pressed so closely together as to be in actual contact, and that it would consequently be necessary to insert a layer of cotton between them to prevent friction and irritation of the skin. The second object of our treatment, the evacuation of the glands, is best obtained by the regular application to them of the best breast-pump there is, the infant's mouth. Should this be impossible, or, in rare cases, insufficient, the breasts must be emptied as often as necessary by massage, or by an artificial breast-pump, the best of the many on the market being the English.

RECTO-VULVAR FISTULA.

This patient whom I now show you has a recto-vaginal fistula, or rather a recto-vulvar fistula, of the kind of which I have spoken to you before, but due to a different cause. She was admitted to the hospital some four years ago with an abscess in one labium, which a few days before had broken spontaneously. From that time feces have passed partly by the vagina. There undoubtedly ex-

isted a collection of pus that, burrowing between the vagina and rectum, was discharged into the rectum and floor of the vestibule. This possibility is an argument for the early opening of an abscess in this situation. This woman, we find, has syphilis of an old date, and the edges of the fistula look like a chronic chancroid. There is a tradition in this hospital against operating upon cases of this kind. I once operated for this condition upon a syphilitic woman in the wards, not knowing the specific taint. The operation was performed with the utmost care, and I was satisfied with every point of it, but when I took the stitches out the whole was larger than at first. I operated again with a like result, so that after the second operation the woman's condition was much worse than it was before I had operated at all. I was thus convinced that the old tradition is correct, unless possibly by specific treatment the tissues are prepared for the operation. I intend to try this in the case before you. I shall administer mercury and iodide of potassium, and after a few weeks shall attempt an operation with some hope of success. Without such preparatory treatment the after-condition is likely to be worse than the first.

MAMMARY ACTIVITY AND MENSTRUATION IN THE NEWBORN.

I have here two infants, each presenting an interesting condition. You see that each presents a marked enlargement of the mammary glands, and that in the glands of one of them there is milk. To demonstrate this I squeeze the breasts; this is a bad practice, for the irritation thus produced might lead to inflammation and suppuration. It is a curious fact that in a large proportion of babies of both sexes we observe an engorgement and functional activity of the mammary glands between the fourth and the twentieth days after birth. I recall a case in which the enlargement equalled the size of a crab-apple, and out of the breasts a stream of milk ran across the chest. We cannot explain why this activity of the mammary glands should so early occur. It requires no treatment; indeed, in no way should the breasts be disturbed. The nurse may have an inclination to squeeze or manipulate the glands, with the mistaken idea that she can thus reduce the swelling, but this should be forbidden. In extreme cases a soothing lotion with inunction of the skin over the glands is called for. If an abscess should develop, it must be opened early, for a mammary abscess in a young infant is a more serious condition than in the adult; in such cases the mortality is quite high, as the pus has a tendency to break inward and infect the lungs. In one of these infants—a female—there was for a few days after birth a bloody discharge from the vagina, that has now ceased. In connection, apparently, with the activity of the breasts after birth, we sometimes see in the female an engorgement of the genitalia and a discharge of blood quite like the menstrual flow. About once a year I see a case of this sort, my attention being called to it by an alarmed nurse or mother, or sometimes by an astonished physician. When I first saw this phenomenon I too was very much interested, and endeavored to learn the source of the bleeding. Upon examination with a speculum improvised of two hairpins, I found the discharge coming from a point in the vagina higher than I could see, presumably from the uterus. Some time after this I saw in the *Transactions of the London Obstetrical Society* that a physician had had an opportunity of making a post-mortem examination in two cases, and had found the uterine mucous membrane in the same condition that it is in menstruation, and had discovered that the blood was oozing from this source. This condition also requires no treatment; the discharge ceases after a few days, and during its continuance the child does not suffer. It is a mistake to use astringent applications or even injections, a custom I have seen recommended, just as much so as it would be to use the same treatment in a menstruating woman. These phenomena seem to be closely allied—the action of the breasts and the discharge from the uterus after birth.

ARTIFICIAL FEEDING OF INFANTS.

I wish now to show you an interesting contrast between a baby that is as well developed as we could desire, and another about as ill-nourished as it could be and live. The child in the nurse's arms has been breast fed, and is the picture of a perfectly healthy infant; it weighs over twenty pounds. In contrast, here is this poor, miserable creature, that was brought into the house four weeks ago in a much worse condition than you now see it. This baby is about two months of age, and I presume was outrageously neglected outside of the hospital; it was fed from the bottle, and that usually implies ignorance and carelessness, if not actual neglect. When the child first came in I despaired of doing anything for it. But we put it on the system of artificial feeding at present in force here, and we have so far had a very satisfactory result. Since the child has been in the house it has increased in weight from five pounds and eight ounces to six pounds; it has gained half a pound. The food of this child has been condensed milk, water, and cream, and so long as it flourishes on this food we shall continue it. I trust we shall in time make of this miserable creature almost as healthy a child as is the other infant. Of course, when we start with such material we are seriously handicapped. Should any disease attack this child, it would be likely to succumb. You can have no better contrast between the ordinary result of feeding upon milk from the healthy mother's breast and the result of bottle-feeding as carried out by ignorant nurses and mothers. I shall have occasion to refer to this again in a later lecture.

About a year ago I devised a weight-sheet for infants in the house, which has been in use ever since; it is a very satisfactory method of observation. Each child's weight is taken daily and entered on this sheet, and by carefully studying the results we can form some opinion as to the relative merits of different kinds of feeding. The subject of artificial feeding is by no means definitely settled, but a solution can be reached only by this plan. The best method of artificially feeding young infants is to be learned with the help of organic chemistry, and must be demonstrated by clinical results. I shall in the near future devote a whole lecture to this subject.

LUMBO-SACRAL KYPHOSIS.

I have next to bring before you a woman seven months pregnant, with one of the most interesting deformities of the spine that I have ever seen in a preg-

nant woman. It is called lumbo-sacral kyphosis (see annexed illustration). The history of the case is as follows: This lump on her back first appeared nine years ago after having lifted a heavy weight. At the present time she is twenty-nine years of age, so that this deformity was produced in her twentieth year, and in consequence of its late occurrence it has not had much effect upon the size and shape of the pelvis; but had this accident occurred early in the girl's life, before the full development of the pelvis, she might have had an exaggerated degree of the deformed pelvis known as kyphotic. This woman has had one child, and experienced no difficulty in the labor. The only effect that the deformity of the spine has on her pregnancy and labor is to shorten the abdominal cavity, with the consequent production of a somewhat pendulous belly. As a result of the diminution in the perpendicular axis of the abdominal cavity, the child *in utero* lies transversely,

because in this position it finds greatest comfort. This may lead to a complication in labor by the presentation of the trunk of the child instead of one of the extremities, but very likely the first few labor-pains will right the malposition. From the surgeon's point of view, I would judge this to be a rare case. The luxation of the last two lumbar vertebræ here is apparently the result of a heavy strain, by which I presume the woman must have ruptured some of the ligaments of the spinal column. Injuries to the spinal column in which the force is exerted in the opposite direction result in what is called a spondylolisthetic pelvis, in which the last lumbar vertebræ, instead of slipping backward, slip forward and downward over the sacrum; but in this case, as the woman stooped over to lift a very heavy weight, the muscular force exerted was sufficient to spring the lower vertebræ backward. I cannot recall a similar case either in my reading or in my personal experience. This woman has the typical short, broad back that is seen in all humpbacks. In her case we shall do nothing but wait for the delivery at the normal termination of pregnancy, because we expect no greater difficulty than possibly a transverse presentation of the child. But it is astonishing how such cases correct themselves in this particular. I have seen the labors in four cases of marked humpback with true kyphotic pelvis. In three cases the transverse position of the child was corrected by the first few labor-pains, and the women delivered themselves without any more difficulty than is usually experienced by primiparæ. The fourth case, on the contrary, was one of the most difficult I ever had to manage. I first attempted craniotomy, but failed, and was compelled to do an immediate Cæsarean section, opening the abdomen and delivering the child before the woman recovered from the ether given for the first operation.

THE INDUCTION OF PREMATURE LABOR AT THE SEVENTH MONTH ON ACCOUNT OF A RHACHITIC PELVIS.

In the case I now bring before you, labor was induced in the seventh month of pregnancy. When the child was born it weighed only three pounds. It was placed in an incubator, in which it remained about a month, and is now, at six months of age, as healthy and hearty as any baby you could find. In this case the indication for the induction of labor was a high grade of contracted pelvis. It was one of the most contracted pelves that we have seen in Blockley for a long time. The delivery occurred in the service of one of my colleagues, who is to be congratulated on the good management of the case. I shall measure the pelvis before you, that you may see the practical application of pelvimetry, and may hear the interesting measurements as I make them. They are as follows:

Iliac spines	24.50 cm.
Iliac crests	24.00 "
External conjugate, Baudelocque's .	15.50 "
Internal " diagonal . .	9.25 "
True " estimated . .	7.00 "
Right diagonal	19.00 "
Left "	19 00 "
Circumference of pelvis . . .	71.20 "

These measurements show at once that we have to deal with a rhachitic pelvis, generally contracted as well as flat. This is shown by the relationship between the spines and the crests of the iliac bones. In addition, there is an interesting point here confirmatory also of the diagnosis of rhachitis; I find the depression beneath the last spinal process of the lumbar vertebræ almost on a line with the posterior superior spines of the ilia. In almost every well-developed female one can actually see the relationship between these three points. The depression below the last lumbar spine is well above the two dimples marking the posterior superior spinous processes of the iliac bones, so that these points with the beginning of the fold between the nates make a lozenge-shaped, or rather a kite-shaped, figure. This can be seen in the Capitoline Venus, and in many other statues of antiquity representing perfect women. In a rhachitic woman, on the other hand, this figure is almost or quite a triangle with the base above and the apex below. Moreover, on vaginal examination, I find in the case before us a very marked promontory, and a very marked increase in the conjugato-symphyseal angle, another symptom of rhachitis, so that we must subtract at least 2¼ cm., if not a trifle more, from the diagonal conju-

gate to get the true antero-posterior diameter of the superior strait, making the latter not more than a scant 7 cm. This woman is very fortunate to have escaped, as she did, with a comparatively easy labor, and to have a child that has grown up so well. It was wise to resort to the induction of labor so much before the usual time. The success of the treatment for the interruption of pregnancy in cases of contracted pelvis demonstrates the advantage of this plan of managing pregnant women with contracted pelves, and shows the importance of always carefully considering this method of dealing with such cases before one decides upon Cæsarean section. In the present rage for abdominal operations that possesses so many surgeons, an unnecessary Cæsarean section is only too likely in a girl like this. Medical literature in the last few years contains not a few cases in which Cæsarean section was performed on much slighter grounds than we had in the present case.

A DEEP WOUND IN THE VAGINAL VAULT, OF MYSTERIOUS ORIGIN.

The next patient is a woman that, about a week ago, was brought in bleeding profusely from the vagina. She gave us the history that the bleeding had commenced about ten o'clock on the previous night. She was so profoundly reduced by the loss of blood that it was a question whether she could be saved or not. Her feet were placed higher than her head, the pillow removed, and the bleeding fortunately ceased spontaneously. The woman's temperature at first was so low that the thermometer would not register. When I first saw her, a few hours after her admission to the house, there was no more bleeding, but there was still a low temperature—96°—and a weak, rapid pulse. I placed a large tampon in the vagina, and ordered restoratives and stimulants. On the following day I made an examination, and, after a careful search, found the origin of the hemorrhage in a lacerated wound in the upper vaginal vault, a little to the left of the cervix, an inch or more in depth, and in its broadest part about half an inch across. I also found the posterior surface of the cervix raw, as if some rough instrument had been scraped over it. I questioned the woman closely as to the cause of this wound. She could give me no explanation of it whatever; she denied everything that might possibly account for it, but we had the evidences of our own senses. There was the freshly-made rent with ragged edges. We still remain in doubt as to the cause. I suspected at first it had been due to violence in coitus. Again, I suspected that the woman had been introducing something into her vagina, probably with the idea that she was pregnant, but she denies this absolutely. I think that the woman is keeping the truth from us, and that the injury was either inflicted in coitus or with an instrument of some sort. We gave the patient daily injections of an antiseptic fluid and tamponed the vagina. She is picking up very rapidly, and in a few days will probably leave the hospital. I would like very much to get a true history from her before she goes. If the wound was the result of violent coitus, it is a very rare case, and it is uncommon enough if it is due to the use of an instrument. The hemorrhage did not come from the womb at all. The uterus was firm, and the cervical canal tightly closed.

This shows you how little dependence can be placed upon the history of some gynecological cases. Had I relied upon the woman's statements, I would have been forced to believe there was probably a cancer of the womb or vagina; but, relying upon the evidences of my own senses, I can only ascribe it to one of the two causes mentioned.

CLINICAL MEMORANDA.

A CASE OF PUERPERAL SEPTICEMIA.

BY W. O. HUSTON, M.D.,
PENINSULA, OHIO.

THE symptoms and temperature-course in some cases of puerperal fever and pelvic abscess bear a striking resemblance to those of malarial fever. In the case of puerperal fever here reported the course of the temperature was erratic and deceptive.

Mrs. H., a primipara, twenty-three years old, was at term, by means of the forceps, delivered of a child that was apparently but recently dead. Strict antiseptic precautions were observed in the accouchement. The perineum was not ruptured.

On the evening of the second day the woman's temperature was normal; her pulse was 60. The only source of trouble was retention of urine.

On the third day the pulse was 100, temperature 99°.

On the fourth day the pulse was 116, temperature 101°.

I syringed the cavity of the womb with a quart of warm 1 : 40 carbolized water on the night and morning of the fifth day. The temperature was from 101.5° to 102°; the pulse 116. The evening douche was followed by a prolonged rigor lasting about an hour.

On the sixth day the temperature was 102.6°; the pulse 118. By means of a dull curette and a polypus-forceps, I removed a quantity of clots and shreds of membrane and placenta, from which emanated a slightly foul odor. Subsequently I applied a douche of mercuric chloride 1 : 3000. A rigor followed lasting about ten minutes.

On the following day, the seventh, the pulse was 105; the temperature 101° A.M., 100° P.M. During the night a sharp attack of diarrhea set in, to which, on the morning of the eighth day, were added distinct evidences of peritonitis. The pulse was 120; the temperature 103.4°. I kept the patient partially narcotized with morphine. I again curetted the uterus, removing a few clots devoid of foul odor. The lochia were apparently normal and at no time suppressed. There was an abundant secretion of milk. The abdomen was moderately tympanitic and tender. During the night the pain was so severe as to require the repeated administration of a third of a grain of morphine.

On the eighth day the morning temperature was 104°, the noon temperature 102.5°, the evening temperature 101.5°. The douches were discontinued. Dr. W. A. Knowlton saw the case in consultation and advised a continuation of the treatment, which had included quinine, iron, and whiskey in large doses, with morphine and occasional minute doses ($\frac{1}{10}$ grain) of calomel.

On the ninth day the morning temperature was 102.5°, the evening temperature 100°. The perspiration, which had been free since the third day, was now quite profuse.

On the tenth day the morning temperature was 101.5°, the evening temperature 99.5°

On the eleventh day the morning temperature was 100°, the noon temperature normal. At about 4.30 P.M. the temperature suddenly rose to 105°, the patient gasping for breath. Ten grains of phenacetin in two hours reduced the temperature to 102.5°.

On the twelfth day the morning temperature was 103.5°, the afternoon temperature 101.5°.

On the thirteenth day the morning temperature was 102.8°, the afternoon temperature normal. Fearing the development of a pelvic abscess I made a careful examination and found the uterus tender, hard, and enlarged, but could detect no deposit about it.

On the fourteenth day the morning temperature was 102.6°, the evening temperature normal.

On the fifteenth day the morning temperature was 102.4°, the evening temperature normal.

On the sixteenth day the morning temperature was 102.4°, the evening temperature 98°.

On the seventeenth day the morning temperature was normal, the evening temperature 102.2°.

On the eighteenth day the morning temperature was normal. Thenceforth the temperature continued normal until the twenty-first day, when it rose to 102.5° for a few hours, again to fall permanently to the normal. Convalescence was now rapid.

One peculiarity about the temperature in this case was the frequency with which it rose in the morning and fell at night, sometimes to normal. The temperature was apparently uninfluenced by quinine, which was given every two or three hours during the day and night, at the rate of from eighteen to seventy-two grains in twenty-four hours, according to the urgency of the symptoms. The largest quantity never depressed the temperature more than one or two degrees. Here was a picture suggestive of remittent and intermittent fever: rigors, fever, sweating, intermissions with exacerbations at times sudden and unexpected.

As to the source of the infection in this case, I have already indicated that the hands and instruments were carefully disinfected. I had not attended a case of contagious disease or held a post-mortem for several weeks. The attendants were neat and clean. The surroundings were good. The recent death of the child would preclude the possibility of infection from that source. The Credé method was employed in the removal of the placenta and the membranes were twisted so as to bring them all away; nevertheless a number of fragments of placenta and membranes were removed with the clots, although their odor was scarcely offensive. In how many thousand cases do like conditions prevail without any evil result. There was no laceration of cervix or perineum.

Dr. W. T. Lusk, a few months ago, in reporting a case of puerperal septicemia seen in consultation, after searching in vain for a cause, finally hit on a foul water-closet, which the woman had several times used before confinement. It occurred to me that if such were the case, why do not more women living outside of the cities have puerperal fever, for they are all compelled to use foul privies.

One point more. During the progress of this case I attended three other women in confinement. Before visiting them I bathed my whole body in a 1 : 2000 solution of mercuric chloride and changed all my clothing. All three cases did well.

A CASE OF ACUTE INTERNAL STRANGULATION OF THE BOWEL IN A CHILD TWO YEARS OF AGE; LAPAROTOMY; DEATH.

BY W. L. SCHAEFER, M.D.,
OF RIDGEVILLE, OHIO.

IN September I was asked to see H. B., two years old, who, the parents told me, had been well until the day before, when he was suddenly seized with colicky pains in the abdomen. In the course of two hours vomiting set in. The vomited matter at first consisted of the contents of the stomach, afterward of bile, but it soon became stercoraceous. The countenance assumed an anxious expression; the eyes were sunken; the pulse was frequent and feeble; the temperature was normal. The child manifested great thirst, but the fluid taken was almost immediately returned. A movement of the bowels took place, the stool consisting principally of mucus, and containing no blood. The abdomen was tympanitic, but no tumor could be detected. Four grains of the mild chloride of mercury, with five grains of bismuth subnitrate, were administered, but were not retained. The vomiting continuing, injections of warm water were given on the following day. These were retained for a while, but brought away no feces. An ounce of glycerin was injected, but soon returned.

The colon was filled with water, but with no result. As a last resort, air was injected by means of a small pair of bellows. This but increased the distention of the abdomen, and greatly added to the distress of the little sufferer.

A day later the abdomen was still greatly distended, and somewhat tender. The peristaltic contraction of the small intestines could be plainly seen through the abdominal walls. The temperature was 101°. As it had become night, I gave one twenty-fourth of a grain of morphine sulphate.

On the following morning Dr. Henderson, of Waynesville, saw the case with me, and abdominal section seemed to offer the only hope. The parents having consented, with the assistance of Dr. Ward, of Lytle, I operated in the afternoon. On opening the abdomen by a median incision, the bowels were found so greatly distended as to obstruct and hinder manipulation. There was no evidence of peritonitis. The obstruction was found to depend upon a complete twist of the small intestine, about four inches above the ileo-cecal valve. The gut between the twist and the ileo-cecal valve was completely collapsed, showing that neither air nor water had passed the valve. The gut was carefully untwisted. It was dark and deeply congested, but not gangrenous. The peritoneum was brought together by buried sutures of fine iron-dyed silk.

Sufficient superficial sutures were placed in the abdominal walls to accurately approximate the cut surfaces, and powered iodoform was dusted over the line of incision. Absorbent cotton and a bandage completed the dressing. The usual antiseptic precautions were observed. When the patient emerged from his anesthesia he was snugly wrapped in a hot blanket, placed in bed, and given a small dose of morphine, one-thirtieth of a grain, with a little whiskey. Reaction, however, failed to set in, and the patient gradually sank, and died two hours after the operation.

REMARKS.—While the result in this case was bad, there are some lessons of practical value to be learned from it. I think that we waited too long, trusting to other means, namely, cathartics, enemata, injections of air and water. One point that was clearly brought out was the irrefutable evidence afforded by the collapsed condition of the gut, between the ileo-cecal valve and the seat of strangulation, that neither air nor water passed the valve.

ANTIPYRIN IN WHOOPING-COUGH.

BY W. A. DEWOLF SMITH, M.D.,
SURGEON TO THE BRITISH COLUMBIA PENITENTIARY, NEW WESTMINSTER, B. C.; VICE-PRESIDENT OF THE B. C. MEDICAL COUNCIL.

THE unsatisfactory nature of the treatment of whooping-cough is easily seen by looking over any article on the subject, or by consulting Neale's *Medical Digest*, where a list of remedies is given taking up a full page and a half of that book.

Almost any remedy in the Pharmacopœia (and many out of it), from charming by a seventh son to vaccination, and from aconite to tar, seems in some hands to have produced good results. The list includes almost every class of remedy—sedatives, tonics, alteratives, antiseptics, and stimulants, and even flagellation has been recommended for it, but fortunately without meeting with any very general acceptation.

During the earlier days of antipyrin much was written in its favor, and it was held up as almost a specific in whooping-cough by Sonnenberger;[1] Griffith,[2] who followed Sonnenberger's method; Genser;[3] Dubousquet-Labordière;[4] and Tordeus, of Brussels,[5] who all obtained good results from it; and more recently a writer in THE MEDICAL NEWS[6] advances the claims of antipyrin.

It must not be forgotten, however, that there is another side to the question, for other observers have found that it either had no effect in controlling the spasms, or that it had positively harmful effects. Amongst those that have not had good results from antipyrin are Monti (of Vienna),[7] Baginsky, and Tuczek, the two last mentioned having seen alarming effects from its use.

My own experience with the drug has been limited to about ten cases during the last three years, and although I have not seen any harm come from its use, the effects in each case were negative. The cases ranged from one to twelve years of age, and were first seen in an early stage of the disease. The remedy was given after Sonnenberger's method—*i. e.*, a dose graduated according to the age of the child. In no case could I see that the disease was at all shortened in its course, nor was there any difference in the severity of the complaint when the remedy was stopped after having been administered for some days.

It is quite clear, therefore, to my mind, that although we have in antipyrin a most valuable remedy in certain forms of disease, its claim to rank as a specific in whooping-cough is not yet established on a sure and certain foundation.

[1] Lancet, 1888, vol. i, p. 437.
[2] THE MEDICAL NEWS, vol. lii, p. 266.
[3] Deutsche med. Wochenschr., April 19, 1888.
[4] Rev. Gén. de Thérap., May 15, 1888. Gaz. Hebd., March 15, 1889.
[5] Lancet, 1889, vol. i, p. 852.
[6] THE MEDICAL NEWS, vol. lix, p. 630.
[7] Montreal Medical Journal, vol. xviii, p. 316.

MEDICAL PROGRESS.

An Unusual Neurosis.—HELMUTH (*Casopio Ceskych Lékaru*) has reported the case of an unmarried, intelligent teacher, twenty-five years old, with no neurotic family history. Menstruation was regular in time but protracted in duration, and always accompanied with pain. Following an injury to the left eye from a broken violin-string, it was noticed that reading readily caused annoyance. On examination no lesion of the eyes could be detected. There was considerable headache. Soon it was observed that on excitement or emotion the left half of the face flushed and became warm, and in the course of two or three seconds the left side of the head and face became the seat of profuse perspiration; the left ear became purple, and from the auditory canal there flowed an aqueous discharge. There was a sense of fulness in the left nostril. At the same time the right side of the face became pale, dry, and cold. If the provocation was intense, the left arm up to the elbow-joint became red, but without perspiration. The phenomena were aggravated during menstruation. Improvement took place as menstruation was regulated and existing constipation was overcome. Iron and aloes were the medicaments employed.

Inflammation of the Vas Deferens Without Epididymitis.—MAURIAC (*Annal. de Dermatol. et de Syphil.*, No. 6, 1891) has recorded the case of a man with gonorrhea and cystitis, who, on the thirty-third day of the disease, after a long journey on foot, was seized with severe pain in the hypogastrium. After the pain had been relieved by the application of ten leeches, the prostate, by rectal examination, was found to be normal. The vesicula seminalis, however, was represented by a small, hard, enlarged mass, while the vas deferens was also hard, enlarged, and painful. The internal opening of the inguinal canal acted as a barrier to the extension of the inflammation, and epididymitis did not develop. In all his experience Mauriac had not previously observed inflammation of the vesicula seminalis and of the vas deferens, without funiculitis and epididymitis.—*Deutsche med. Wochenschr.*, No. 44, 1891, p. 1232.

Recovery from a Tumor in the Region of Right Crus Cerebri.—THOMSON (*Edinburgh Medical Journal*, September, 1891) recently presented to the Edinburgh Medico-chirurgical Society a girl, six years old, who fifteen months previously, when she was presented to the society, displayed paresis of the left side of the face and of the left arm and leg, paralysis of the muscles supplied by the right third nerve, slight optic neuritis, and marked mental dulness. With careful feeding and the administration of cod-liver oil and iodide of iron, the palsy had moderated; slight dilatation and sluggishness of the right pupil remained; the neuritis had disappeared; the mental condition had improved; and there had been a gain in weight and strength. The lesion was considered as a tuberculoma in the region of the right crus cerebri.

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SATURDAY, JANUARY 9, 1892.

THE ELIMINATION OF THE DANGERS CONNECTED WITH MILK-SUPPLY.

THE economic and sanitary advantages of milk-inspection cannot be over-estimated. As commonly practised, adulteration consists either in the addition of water or in the removal of more or less of the cream, or in both. The effect of lowering the nutritive value of an article that enters so largely into human diet, that is so much depended on in the sick-room, and that is so universally used as food for infants, can be readily comprehended.

The law directs that only pure milk shall be sold, and yet the means of accomplishing this object fail in some most important particulars. Milk may be the vehicle of conveying the poison of disease. It has been proved beyond doubt that the *materies morbi* of enteric fever, of scarlatina, and of diphtheria has been conveyed through this medium; and it is extremely probable that tuberculosis can be transmitted in the same way. The tests ordinarily applied to milk fail to detect the specific germs of these diseases.

Chemical analysis, though of the greatest advantage in accurately determining the composition of milk and in detecting adulteration, is unable to discover the living pathogenic entities, which are the more dangerous because of their power of directly producing disease. In order, therefore, to guard against this subtle danger, and in order to render milk-inspection a positive protection, it is necessary to resort to other methods of investigation. Fortunately, in biologic examination we have a valuable means of supplementing chemic analysis. If biologic examination were only occasionally the means of detecting the tubercle-bacillus in milk, the discovery would be of sufficient value to compensate for the investigation, for by it the dairy-farm from which the milk was obtained could easily be discovered, and the diseased animals that day after day caused the milk of an entire herd to be infected could be promptly destroyed.

But the investigation need not be confined to tuberculosis. Biologic science has made rapid strides, and is constantly adding to our knowledge of the rôle played by microörganisms in the causation of disease. This knowledge, whenever practicable, should be made use of in conserving the public health.

Both chemic analysis and biologic examination have their special and well-defined fields of exploration. When one fails, the other may be able to make valuable discoveries. Their office is to aid one another, and supply each other's deficiencies. Hence, the best results are to be obtained when the two methods of examination are combined.

Another means of protection, and a most important one because it strikes at the source of contamination, is the systematic inspection of dairy-farms, dairies, and milk-shops. This practice is required by the English law and to some extent is carried out, but in America it is almost entirely neglected. Milk may be contaminated by the addition of impure water in the milk-houses, and is frequently adulterated after it leaves the dairy-farm; but the most dangerous source of contamination is at the dairy-farm itself. For this reason, inspection is very incomplete that does not include a watchful supervision of the cattle, their environment and treatment, and all the conditions under which the milk is prepared for the market. The seeds of tuberculosis lie concealed in what to all appearances is wholesome milk, and who can tell what amount of disease is distributed through the unsuspected agency of this common article of food? There is less likelihood of infection from anthrax or

malignant pustule, and foot-and-mouth disease, as self-interest prompts the dairyman to quickly exclude from his herd animals sick with these diseases.

It has not been determined whether or not the milk of cows suffering from actinomycosis, caused by malignant ray-fungus, is capable, through its ingestion, of propagating the disease, but until this point is decided the milk should be rejected as suspicious. We have known cows suffering from this affection to be milked for a season, and then turned over to the butcher for slaughter—a practice that is reckless if not positively dangerous in its ultimate results. MR. ERNEST HART has tabulated a number of epidemics of enteric fever, scarlatina, and diphtheria that have been definitely traced to milk infected at the dairy-farm. The milk of cows fed on distillery waste, or that are sickly or in bad condition from unsuitable food, impure water, bad housing and care, or that have recently calved, cannot be regarded otherwise than with suspicion. Milk is known to have been infected by the hands of the milker convalescent from scarlet fever. Typhoid fever has been propagated by the use of infected water for rinsing the milk-cans and diluting the milk.

It is seen that the liability of contamination to which milk is exposed at the place of collection is very great and constitutes the chief source of danger, especially so as most of the elements of danger may escape detection by the ordinary methods of laboratory investigation. Hence the necessity of establishing systematic inspection of all dairy-farms as well as of milk-shops by competent officers amply clothed with authority to compel the observance of regulations for their proper sanitary administration.

It is important that none but healthy cattle should be permitted in the herd. Cows affected with tuberculosis or other dangerous infectious or contagious diseases should at once be isolated or destroyed. Pure water is quite as essential to the health of animals as is wholesome food. Special attention should be directed to the housing of the cattle. Cleanliness and ventilation are most important requirements. The possibility of contamination of the water-supply from any source, especially by the cesspool, is to be carefully guarded against. The greatest cleanliness is to be observed in collecting and in handling the milk.

Should contagious disease break out in the dairyman's family, he should be prepared by previous instruction to guard the milk-supply from this source of danger. Printed instructions covering the management of the dairy-farm should be supplied to the farmer, and the inspections should be sufficiently frequent to see that the instructions are faithfully carried out. By adopting the plan thus briefly outlined, in conjunction with the tests usually applied to milk when delivered in the city, there is the assurance that the milk-supply will be most effectually guarded against adulteration and contamination.

The inspection of dairy-farms should be conducted under the provisions of a law applying to the whole State. Cities obtain their milk-supply from surrounding and even distant counties, in territory lying beyond their jurisdiction, and they are therefore powerless to exercise the necessary supervision. This is also true of towns and villages, though in the case of these there is less difficulty in obtaining information with regard to the source of the supply. In the absence of a general law, protection might be secured by permitting the sale of milk under license by those producers only that submit a satisfactory certificate of inspection of their herds and farms made by qualified persons at such stated periods of time as may be determined upon. The details of inspection should cover the matters of investigation already pointed out, and the reliability of certification should be subject to proof.

WORK OF THE DREXEL INSTITUTE.

THERE are few tendencies or facts that more continuously and exasperatingly act as brakes to medical progress than popular ignorance of physiology, hygiene, and sanitation. It is to this ignorance that quackery of a thousand types, the patent-medicine shame, and medical obscurantism, owe their vogue. Every agency, therefore, that looks to dispelling this ignorance must be hailed with delight by the medical profession. The establishing of departments of hygiene like that of the University of Pennsylvania is prophetic of the great science of preventive medicine, of which the University Extension movement, bacteriological laboratories, gymnasia, etc., are glimpses and promises.

But to those that would grapple with the real evils of life it has always seemed strange and profoundly sad that democratic education seemed fatally prone to imitate the useless virtues, decaying graces, and luxurious superfluities of aristocratic para-

sitism. The daughter of the mechanic was taught piano-thrumming, embroidery, or rhetoric, instead of potato-cooking, dressmaking, or household economy. The dream of the young lady's brother was to be sharp-witted, get "a pull," get ahead, and learn the wasteful vices of fashionable loaferdom. It is, for example, quite impossible to estimate the disease-producing power of the universal scorn of the art of cookery—an art upon which our physical health and more than physical happiness instantly and continuously depends.

In that splendid proof of modern heroism, the "Drexel Institute of Art, Science, and Industry," it is most gratifying to find that the physical and physiological, the intensely practical problems and needs of life are clearly seen, met, and provided for. To take a single instance: according to the *Preliminary Circular of Information* issued by the Institute—"The department of Domestic Economy will offer a liberal course of instruction and training for girls and young women in everything pertaining to the organization and management of the household. It will be thoroughly practical, while aiming to broaden the culture of young women in directions that have been heretofore neglected in their general education.

"The course will extend over two years, and will embrace cookery, millinery, and dressmaking, the building, sanitation, decoration, and management of the house, household economy, human physiology and hygiene, business forms and accounts, free-hand drawing, elementary economics, and physical training."

The course in cookery consists of instruction in the most practical details, beginning with the making and care of the fire, and ending with the chemistry of foods. There is a collection of food-products and preparations as an auxiliary of the course. The department of Physical Training will give opportunities for the physical culture of girls and young women, children and adults, lectures on personal and public hygiene, etc.

THE OBSOLESCENCE OF MEDICAL TERMS.

THE suggestion to abolish the use of the word phthisis, at least in its application to tuberculosis of the lungs, is both practical and progressive. First introduced to designate conditions attended with wasting, its application gradually became restricted to the commonest condition of which wasting is a most conspicuous manifestation, and for which phthisis then became a synonym—pulmonary tuberculosis. There are few dissentients to-day from the doctrine of the unity of phthisis, and those few will have to adopt some more distinctive name if they decline to accept that in common employ. There is now no further need for the word phthisis, and as a useless term it should be rooted out of medical nomenclature.

A somewhat analogous transformation is illustrated by the varying employment of the word apoplexy. First used to designate the sudden loss of consciousness that results not only from cerebral hemorrhage, but also from thrombosis and embolism, it subsequently became synonymous with the most common of these conditions—hemorrhage. Then its application was extended until hemorrhage into other viscera was also spoken of as apoplexy. Thus hemorrhage into the lungs became pulmonary apoplexy. There is now no further use for the word apoplexy, except as descriptive of a condition that is but symptomatic.

There is one other word that is most opprobrious, and that should be relegated to the obscurity that gave it birth—the word cancer. There was a time when the histological structure of neoplasms was even less well understood than it is to-day. Then all malignant growths were considered cancerous—and we fear that even to-day the careless and the uninformed are indifferent in their designation of such growths. With the creation of the word carcinoma there is no further necessity for the word cancer. The one can never be misunderstood, the other is vague, and bespeaks lack of precision.

Let us henceforth refrain from saying phthisis, apoplexy, and cancer, when we mean pulmonary tuberculosis, hemorrhage, and carcinoma.

MEDICAL ASPECTS OF COAL-BURNING.

LONDON has been shut in more than midnight darkness by a fog more dense and persistent than ever experienced before. People could not see their hands before their eyes in mid-day. Great suffering, thousands of accidents to life and health, have occurred, and the "smoke-nuisance"—the origin of the fog-nuisance—has become a matter of national medical concern. According to scientific calculations about 100 tons of soot fall upon the 110 square miles of roofs and streets of London each day. The number of fogs is constantly increasing, just in pro-

portion to the consumption (or, to speak more correctly, the non-consumption) of coal. Between six and seven million tons of coal were burned in the metropolis in 1890. Fogs in cold weather are invariably accompanied by a rise in the death-rate. Of course, to some extent, even in our country we are running the same race, and, though less possible of estimation, our death-rate must constantly be affected by the same cause. If, as certainly is true, sunshine is necessary to healthy life, human as well as vegetable, it becomes more and more imperative that mechanical ingenuity and sanitary science must teach our legislators how we may stop a million chimneys from belching forth into the atmosphere thousands of tons of black clouds of unconsumed carbon—a wretched pecuniary waste, but a still more pernicious squandering of health and life.

CORRESPONDENCE.

AN EASY METHOD OF ESTIMATING THE PERCENTAGE OF ALBUMIN IN URINE.

To the Editor of THE MEDICAL NEWS,

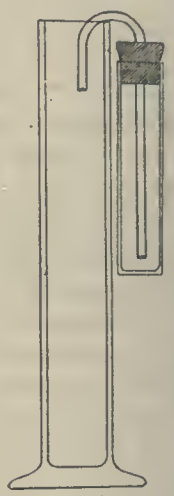
SIR: In THE MEDICAL NEWS of December 19, 1891, is a letter on the "Maximum Percentage of Albumin in Urine," which calls attention to the confusion and inaccuracy of statements in regard to the proportions of albumin in urine. The only accurate method of determining the percentage of albumin in urine or in other fluids is to separate the albumin and then carefully wash, dry, and weigh it. This process is tedious, and often impracticable. The general practitioner needs a short and easy method that is fairly accurate, and it is most desirable that some such method should be generally adopted. I have been in the habit of using a simple and rapid process that yields comparative results that are sufficiently accurate for practical purposes. While I make no claim to novelty in the procedure, the fact that there is no single method in general use leads me to describe it as one that is convenient and that requires no special skill or dexterity.

I have had constructed a tube, of which the accompanying drawing (Fig. 1) represents about one-fourth of the actual size, with an arbitrary graduation up to 100. In a test-tube of convenient size, I boil a little more than half a fluidounce of urine, to which have been added four or five drops of ordinary acetic acid. If the urine be turbid, it may be filtered before being boiled. After thorough boiling and allowing the urine to cool for two or three minutes, it should be well shaken, in order to divide the precipitated albumin as finely as possible, and then the graduation tube is fitted to the 100 mark. After twelve hours' standing, the percentage of precipitate is noted. The albumin will settle in twelve hours, and the volume of the deposit is not sensibly diminished if it be allowed to stand for twenty-four hours. The proportion of albumin measured in this way should be called *the percentage in volume of undried albumin.*

This method is not exactly accurate, but it is sufficiently so for ordinary purposes. It will indicate fairly well a proportion of 1 or 2 per cent. of albumin. When the proportion is less than 1 per cent., the ordinary method by contact or by simple boiling with a few drops of acetic acid would indicate "a trace" of albumin.

FIG. 1.

FIG. 2.



While writing upon this subject, I am led to describe a simple apparatus for detecting the presence of sugar in the urine, when the results of Fehling's test are uncertain. The accompanying drawing represents the apparatus one-fourth size. A small straight bottle or a small test-tube is fitted with a cork, through which is passed a small tube that reaches nearly to the bottom. The glass tube is bent so that the apparatus will hang over an ordinary test-tube or other convenient vessel. (Fig. 2.) The bottle is completely filled with urine, with which a piece of Fleischmann's yeast, about the size of a pea, has been thoroughly mixed. In putting in the cork, it is necessary to be careful to exclude every bubble of air. If the apparatus be kept for a half-hour at a temperature of from 80° to 90° F., a bubble of gas will appear if sugar be present in the smallest quantity. The apparatus may be placed in the sun or near a heater, but the temperature should not be higher than 100°. This is valuable as a negative test. In case of doubt I have often been able to determine absolutely the presence or absence of sugar before I had finished taking the history.

Procedures for the examination of urine, to be available in ordinary practice, must be short and easy, requiring little time and no great skill in manipulation, otherwise examinations that may be important will be neglected.

In the hope of contributing something to the needs of the busy practitioner, I have ventured to make this communication. With the method I have described for the estimation of the percentage of albumin, Doremus's

ureometer for determining the proportion of urea, and Roberts's "differential density" process for quantitative analysis for sugar, a chemical examination of the urine sufficiently complete and accurate to meet the requirements of most cases, is easily within the reach of every physician. Sincerely,

AUSTIN FLINT, M.D.

14 WEST THIRTY-THIRD STREET,
NEW YORK CITY.

TENDON-LENGTHENING BY SPLITTING, ETC.

To the Editor of THE MEDICAL NEWS,

SIR: As regards details of cases of lengthening of tendons by splitting them, etc., after the method recommended by Dr. Rhoads, I beg leave to state that, according to the enclosed copy of the German Hospital Records, I operated January 13, 1888, exactly according to Dr. Rhoads' method, on the contracted flexor tendons of the forearm of C. F., a girl twenty-two years of age, giving her a useful hand. I enclose a diagram also copied from the Hospital Record-book.[1] I performed the same operation some time before this, however, in a case of pes varo-equinus, and lengthened the tendo Achillis, but I have no notes of the case. I also operated in this manner on October 25, 1888, at the Presbyterian Hospital of this city, for the same defect. It was a case of pes equino-varus with contraction of the tendo Achillis in a girl eighteen years of age. Arthrodesis was done at the ankle-joint and Chopart's articulation, and the tendo Achillis lengthened in precisely the same way as recommended by Dr. Rhoads.

The idea was familiar to me, though I fail to find the method in any of the text-books in my possession. But do not doubt that somewhere an older communication to that effect must exist.

Allow me here to mention and recommend another method that, in suitable cases, will be found useful, and one that I have practised (if I am not mistaken) since 1884, my first case being one of lengthening the quadriceps tendon in an old fracture of the patella. It consists in cutting across the tendinous portion within its connection with the lateral fleshy muscular tissue. The latter will allow of considerable stretching, and in this manner the continuity of the organ will be preserved while lengthening is achieved, the degree of which, of course, varies in different muscles. In a contraction of the flexors of the forearm I found a combination of both methods very useful. I also combined this method with the flap method (reflected flap) in a case of injury to the extensors of the wrist, in which an extraordinarily wide gap existed between the stumps of the tendons four weeks after the original injury.

I do not know whether anyone before me has put this same idea into practice. At all events it seems not to be known, and I would like to mention it here, hoping that it may be useful and of benefit to patients.

I remain, yours very respectfully,

F. LANGE, M.D.

NEW YORK.

[1] Not reproduced because illustrating essentially the same method of operation as recommended by Dr. Rhoads and others.—ED. MEDICAL NEWS.

PHENACETIN IN THE TREATMENT OF INFLUENZA.

To the Editor of THE MEDICAL NEWS,

SIR: It is of great advantage to have at hand a remedy upon which one can place reliance, particularly for those diseases in which the onset is rapid and is attended with intense pain and hyperesthesia and considerable nervous derangement, the temperature mounting up to 102° or 103°, as is the case in influenza. Such a remedy will have enhanced value if it be quick in action, and if it can be employed without injury to patients. These advantages belong to phenacetin and sodium salicylate, which I have used in combination in a considerable number of cases of influenza with the happiest results. I have found the combination rapid, safe, and certain in action. I prescribe 5 grains each of phenacetin and sodium salicylate with 2½ grains of sugar of milk, the first two doses to be taken at an interval of two hours, and the subsequent doses to be taken at intervals of three hours. A laxative is given, if required. Attending bronchitis, pneumonia, either croupous or catarrhal, or other complications, while not a contra-indication to the employment of phenacetin and sodium salicylate, should be treated in the usual manner.

The method of treatment outlined may elicit criticism and be condemned as dangerous, particularly by those who have not employed it. I have, however, found it safe. I have employed it in the cases of childen as young as nine months, as well as in adults advanced in years. I do not advise the reckless and indiscriminate use of phenacetin; but, given intelligently and watched carefully, I consider it not only a safe, but a most valuable remedy. When necessary, stimulation may be added to the treatment.

Respectfully,

S. RUSH KETCHAM, M.D.

PHILADELPHIA.

THE TREATMENT OF HEMORRHAGE IN TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: I wish to enter a protest against the usual and generally-accepted treatment of intestinal hemorrhage in typhoid fever. My last few cases, having ended in recovery, without medication, encourage me to believe that my previous results (about 50 per cent. mortality) in this alarming accident, were due to hypermedication. The hemorrhage has usually ceased by the time that its occurrence is recognized.

The remedial agents usually employed are ergotin, tannic acid, plumbic acetate, and opium. The hypodermatic injection of ergotin causes, first, a lowering of the arterial pressure, which is soon followed by an increase of pressure, so that ergot, if not harmful, is at least of doubtful utility. I have seen two cases of gangrene of the toes in the course of typhoid fever in which ergot had been administered.

A popular and favorite prescription for intestinal hemorrhage in typhoid fever contains tannic acid, tincture of opium, turpentine, and chloroform. The tannic acid is presumably selected for its local effect in traversing the intestine, or for its conversion into gallic acid in the circulation. The astringent effect can at best be but

slight. The tincture of opium is anti-peristaltic, but it is questionable whether muscular paralysis is desirable. Would one administer opium after labor or abortion, when the uterus is filled with clots that may become septic? In typhoid fever the putrid sloughs in the intestine are a source of infection.

Respectfully, John Rodman, M.D.

Abilene, Texas.

SPECIMENS OF URINE DESIRED.

To the Editor of The Medical News,

Sir: I am exceedingly anxious to obtain specimens of urine from cases of typhlitis or appendicitis, in order to determine, by an examination of this fluid, if it is not possible to diagnosticate the occurrence of suppuration and the presence of abscess more certainly than by the usual subjective and objective symptoms of pus-formation presented by the patient, which hitherto have had to be relied upon in arriving at an opinion as to the advisability of operation.

I beg to ask those in whose hands unquestionable cases of these ailments may come, whether abscess be suspected or not, that they will favor me with *fresh* specimens (about one pint) of urine, accompanied by a slip stating diagnosis (appendicitis, typhlitis, perityphlitis), and if it is believed an abscess is in process of formation or has formed. These specimens may be sent, in the janitor's care, to the Jefferson Hospital, Monday, Wednesday, Thursday, or Friday mornings by 10 o'clock, or, preferably, to my address, or they may be held to be called for at the house of the donor.

Very respectfully, D. D. Stewart, M.D.

2620 North Fifth Street.

REVIEWS.

Regional Anatomy in Its Relation to Medicine and Surgery. By George McClellan, M.D., Lecturer on Descriptive and Regional Anatomy at the Pennsylvania School of Anatomy; Professor of Anatomy at the Pennsylvania Academy of the Fine Arts, etc. In two volumes. Vol. I. Philadelphia: J. B. Lippincott Company, 1891.

The feature of this work that first attracts attention, and gives it a peculiar and distinctive value for the practitioner, is the illustrations. These are wonderfully faithful lithographic reproductions of photographs taken by the author from dissections made with his own hands, and they show not only his skill and ingenuity as an anatomist, but his judgment and dexterity as a photographer. Each object of interest in a plate is indicated by a numeral, placed not on the part itself, but at the side of the picture, and the two are connected by a horizontal line heavy enough to be readily descried, and yet so delicate as to cause no interference with the pictorial effect. The numbers are arranged in regular order, so that reference from the explanatory table to the plate, and *vice versa*, is rendered as easy as possible. To one that experiences annoyance at the disfigurement of illustrations by direct labelling, and at the expenditure of time in the search through a whole paragraph of reference-titles that are merely pitchforked together (and who has not been fretted by these things?), this simple device is a boon that should be highly appreciated.

The plates are all colored—the title-page tells us, "after Nature;" but, in the preface, the author admits the possibility of "some excess of tint or shade, as might be expected when the paints are mixed and applied with more enthusiasm than artistic skill." The coloring certainly enhances the worth of the pictures by as much as it facilitates the discrimination of their various parts; and nobody will be disposed to quarrel with any exaggeration of hue that he may observe. But, as regards most of the plates, we must take issue with the assertion that the tints are such as we find in the objects that they represent. It is true that arteries which have been injected with vermilion wax will permit the gorgeous pigment to show through their walls; but the color of these vessels then becomes artificial, and the imitation of it in the plate, however perfect, is not entitled to be called natural. The student deriving his knowledge of anatomy largely from pictures in which one set of vessels is always red, another always blue, and the nerves snow-white, unless he is wisely warned, is doomed to grievous disappointment when he essays operations upon patients in whom Nature has not considered his convenience by a similar distribution of pigments. And so, while we express our admiration of these superb illustrations, the very artificiality of which is a merit, we trust that we shall not be accused of cavilling, if we object to the statement that they are "colored after Nature."

Several plane sections are introduced with excellent effect, and we regret that this modern and peculiarly useful method of demonstrating the relations of the different parts in a given region has not been employed more extensively.

The number of figures in this volume exceeds one hundred, and a still larger series is promised for the second.

The text is excellent. The author is evidently a practical man, who understands the needs of the progressive physician and surgeon. This is evidenced by the conspicuous attention bestowed upon cranio-cerebral topography, a knowledge of the relations of surface-markings to underlying areas of the brain being demanded in these days of every surgeon. This involves the introduction of craniometric terms with which most medical men, and even some medical lexicographers, are unacquainted; but a familiarity with these words is, even now, essential to the comprehension of the reports of encephalic operations. When it is necessary, attention is directed to the practical bearings of the facts of particular structures, and the author imparts vitality to his discourse by emphasizing his points with brief and modest mention of cases coming under his own observation. The selection of illustrative instances is judicious, and the reader is not wearied by the presentation of many exceptions, so phenomenally rare as to be of no advantage to the great majority of practitioners. It was obviously intended to omit unimportant details, as is seen by the mere allusion to certain small venous sinuses at the base of the skull; but the difficulty of refraining from minute description is shown here and there, as in the case of the intrinsic muscles of the pinna of the ear, of which most of us are content to be ignorant.

It is not to be expected that so comprehensive a work

would be free from errors, and we have noted quite a number; but, while we do not care to make extended comment on them, we can hardly refrain from deprecating the slip by which the epithelial lining of the oropharynx is compared with that of "the rest of the mouth." It is so hard for some students to learn that the pharynx is not a portion of the mouth, that we deplore the sanction that is here afforded their mistaken notion.

The style of the writing is easy and for the most part clear; but occasionally there are infelicities of expression that cast some obscurity over the meaning. We suppose that it is of no avail to protest against the almost universal custom of anatomical writers that implies a perfect acquaintance with the original designs of the Creator, but the readiness with which the intention in the formation of the various organs is assigned is provocative of inquiry as to the source of their information.

It is gratifying to notice that the metric system is employed in stating measures and weights, and we experience a quickening of the long-deferred hope that the day is not distant when it will be unnecessary to translate each term of this easy—because decimal—system into the antiquated nomenclature in prevalent use.

This work approaches its subject with so different a purpose from that of the ordinary text-books on descriptive anatomy that it will not be expected to supplant them. Rather will it give them a new interest and value by complementing their service, and tending to render more attractive a branch of science that is too little studied both in and out of the schools, though it is at the foundation of all true knowledge in medicine. We congratulate the author upon his achievement in this first part, and shall look for the second with very pleasant anticipation.

A MANUAL OF VENEREAL DISEASES: BEING AN EPITOME OF THE MOST APPROVED TREATMENT. By EVERETT M. CULVER, A.M., M.D., Pathologist and Assistant Surgeon, Manhattan Hospital of New York City, etc., and JAMES R. HAYDEN, M.D., Chief of Clinic, Venereal Department of Vanderbilt Clinic, College of Physicians and Surgeons, New York. With Illustrations. 8vo, pp. 294. Philadelphia: Lea Bros. & Co., 1891.

THE arrangement of this book invites comparison. The work is divided into two parts. The first part, designated "Gonorrhea," is by Dr. Culver, and includes two chapters on chancroid. The second part, by Dr. Hayden, is devoted to a consideration of syphilis. It is with a sense of relief that one passes from the first to the second part, and one is refreshed by the transition. In the first part the essential facts are so often obscured by looseness of language, by indifference of style and diction, by lack of clearness of expression, that the reading becomes a task attended with fatigue and disappointment. The personal pronoun in the first person is so indiscriminately used in the plural or singular that one is at times in doubt as to the authority for the statements made. The wide range of subjects included in the second part is, on the other hand, treated with a conciseness, clearness, and completeness that command admiration and excite interest.

In no part of the work is a word said of synovitis—rheumatism, it is commonly called—as a complication of gonorrhea. This omission must be considered culpable, for the inflammation of the synovial membrane is sometimes followed by permanent impairment of the function of the joint. A little more stress, too, might have been laid upon the risk of fatal ascending pyelonephritis in the course of gonorrhea or of organic stricture of the urethra. We cannot agree with the dictum that directs the poulticing of a bubo as soon as its "character is made out by the rapid swelling and area of redness and the presence of a chancroidal sore;" nor have we a fear that if the bubo be "not thoroughly poulticed and have not well suppurated before opening" there will remain "much tissue in a half-necrotic state that must be scraped out with sharp spoons before packing." It is not an unnecessary caution to warn the operator of the danger of injury to the iliac vessels in the operative treatment of bubo, as well as the possibility of grave hemorrhage from ulceration.

The employment of glycerin, vaseline, or cosmoline as lubricants instead of olive oil, especially when rubber catheters are employed, is strongly recommended.

Operation is advised for stricture when the health of the patient is reduced, when cystitis exists, with retention of urine and loss of sleep; when there is renal disease, when time is an element of importance to the patient, and when the stricture is resilient. When the stricture is situated anteriorly to the triangular ligament, internal urethrotomy should be performed; when situated posteriorly, external urethrotomy.

The etiologic relation of syphilis and posterior spinal sclerosis is dubiously dismissed in a few words, despite accumulating evidence that tends to demonstrate the intimate connection between preëxisting syphilis and the subsequent development of the disease of the cord.

Surely the English language is rich enough in words to obviate the necessity for employing, in a work printed in English, only the French names for some of the syphilides.

PULMONARY CONSUMPTION: A NERVOUS DISEASE, CONSIDERED AS SUCH FROM A PRACTICAL, A CLINICAL, AND A THERAPEUTIC STANDPOINT. By THOMAS J. MAYS, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. 12mo, pp. 185; paper. (Physicians' Leisure Library.) Detroit, Mich.: George S. Davis, 1891.

THE author says in his preface that "this essay is an effort to give a rational account of the principal causes and of the nature of pulmonary consumption, and has been written in the belief that no theory of the origin of disease can ever earn the right to permanent existence if it falls short in pointing out the path through which the disease may be prevented or alleviated." He rejects entirely the bacillus theory, and believes that the neurotic theory propounded in his pages explains most, if not all, of the varied and apparently opposing phenomena constantly observed in this disease, while it also serves the practical purposes of pointing out the means and methods of rational and successful treatment.

There is much logical argument, much unproved

speculation, much valuable compilation of statistics, much hyper-theoretical criticism to be found in these pages. The importance of hereditary influence, and especially of the physical conditions of the parents, independent of actual disease, is well set forth, and should be carefully studied by all intelligent physicians. The neurotic theory, however, seems to us too narrow. The nervous failure in consumptives is but part and parcel of the general nutritive failure, for which as yet we have no satisfactory term. Dr. Mays lays great stress upon rest in the treatment of consumption as a means of conserving the vital energies of the patient. He administers antipyretics to diminish waste of tissue consequent upon fever [a principle, but not a method, that we indorse], pays due attention to the digestive system, and gives most nourishing food. In addition, he administers cod-liver oil, hypophosphites, resorts to massage, galvanization of the pneumogastric, inhalation of oxygen, nitrous oxide, and compressed air, pulmonary gymnastics, and any other agent or agency that has power to enhance the local and general nutritive tone of the body.

NEWS ITEMS.

The Influenza Bacillus.—As we go to press the newspapers contain a cable report from Berlin that Dr. Peifer has discovered a bacillus deemed the specific cause of influenza. The microbe is said to be very minute, to resemble the micrococcus pyogenes, and to have been successfully isolated and used in inoculation experiments. It is scarcely necessary to add that such reports may be false in part or entirely.

Influenza a Contagious Disease.—According to telegraphic dispatches, the authorities of Dover, England, are attempting to cope with influenza by a rigorous application of the laws pertaining to the public health, which make it an offence for a person suffering with a contagious disease to visit public places. A number of persons who were suffering with that malady, and who had frequented public places, were charged with violation of the health law. They were convicted, and each of them was fined £5. It is believed to be the first instance, in England at least, of persons suffering from influenza being fined for endangering the public health by coming in contact with the general public.

Influenza in Horses.—It is said that an epidemic resembling influenza is causing ravages among horses at Normanton, England. In three coal mines twenty horses have died, and eighty are ill. Work has been stopped in the mines, and thousands of miners are idle.

Medical Legislation in Ohio.—At a recent meeting of representatives of the faculties of eight medical colleges of Ohio, a resolution was passed requesting the legislature to enact laws embodying:

1. The creation of a board or boards of medical examiners, in the composition of which equitable and just representation shall be accorded to the various recognized denominations of medical practice.

2. The examination of all candidates for the practice of medicine holding diplomas hereafter issued by medical colleges which shall be deemed in good standing by the board.

3. Exemptions from examination to extend only to those who at the time of the enactment of this law shall be recognized as legal practitioners within the meaning of existing statutes; but all legal practitioners shall be required to register.

4. A penal clause which shall secure the enforcement of the foregoing provisions.

The Berlin Academy of Science has appropriated twelve hundred dollars for the publication of scientific works. Three hundred and seventy-five dollars will be devoted to *The Law of Transformation of the Bones*, by Julius Wolff, of Berlin; five hundred dollars to *The Progress of Physics*, issued since 1847 by the Berlin Physical Society; and one hundred and eighty-seven dollars for the *Formulation of a Uniform Anatomical Nomenclature*, which for two years has been in preparation by the German Anatomical Society.

Prostitution and Syphilis.—It is proposed to hold in Paris, in 1893, an international congress composed of physicians, jurists, hygienists, economists, and sociologists, for the study of questions relating to prostitution and the propagation of syphilis.

An Army Medical Board will be in session in Chicago, Ill., during February, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before January 15, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate of a regular medical college, as evidence of which his diploma must be submitted to the Board. Further information regarding the examinations may be obtained by addressing the Surgeon-General of the U. S. Army, Washington, D. C.

Charles Meigs Wilson, M.D., third son of the late Dr Ellwood Wilson, died a short time ago at Knoxville, whither he had gone to occupy the chair of Gynecology and Diseases of Children in the University of Tennessee.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

INJURY TO THE SPINE: INVENTION AND APPLICATION OF PAPER JACKET.

BY J. MARSHALL HAWKES, M.D.,
OF NEW YORK CITY.

IN the early part of 1887, Ada G., aged twenty-three years, having received a fall, began to suffer from pain in the vicinity of the third lumbar vertebra. Later, the pain at times became so violent that she could neither stand nor sit, but was obliged to maintain the recumbent position. It did not, however, become continuous until the following autumn, when she became subject to such severe and prolonged attacks as incapacitated her for work.

The attendant physician ordered blisters to be placed transversely across the body of the affected vertebra. For nine weeks this style of treatment was continued, but little relief was obtained and the pain returned in all its severity on the resumption of work.

In May of that year, becoming convinced that she was not improving, she applied to a specialist in electro-therapeutics. For two months electricity was applied, but again the patient experienced but little relief, and the pain promptly returned on the resumption of work.

In December, ten months after the commencement of her trouble, I was called to see her. Since the ordinary, routine treatment had already been tried, nothing seemed to remain but to remove the superincumbent weight and thus, if possible, relieve the pressure upon the injured vertebra. Accordingly, the patient was suspended by the head and shoulders, when the pain immediately disappeared, but the patient as promptly fainted. It was found impossible to suspend her longer than a few minutes at a time, for several days, but as soon as she could remain suspended a sufficient length of time a plaster jacket was made. On its application the pain immediately ceased, but the patient constantly complained of the weight and the discomfort of the plaster jacket. Besides, after a few days, the disintegrating plaster began to sift down through her clothing, the odor of accumulating perspiration became very disagreeable, and the jacket itself grew loose and did not properly support the weight of the upper part of the body.

Finding it necessary, for the reasons stated, to supply something lighter, felt, leather, silicate of soda bandages, wood, nickelled electroplate, etc., were successively tried, but each had its serious and irremediable objections. Without entering into tiresome and useless details, they were all either hot, heavy, cumbersome, conspicuous, expensive, or difficult to prepare, etc. While in this quandary as to what to make, a paper shell, such as is used by professional oarsmen, furnished the needed suggestion. Surely, if paper could be used to make a pail, pan, car-wheel, or a boat, it certainly appeared to be an appropriate substitute for the materials in use for spinal supports. Accordingly, a mould of the patient's body was made by winding wet plaster bandages around the body, from the anterior superior spinous processes of the ilia to near the lower borders of the axillæ, while the patient was suspended, with the pelvis fixed. A plaster cast, made from the mould, was so modelled as to preserve the natural anatomical contour of the patient. Upon this cast, paper of various styles, weights, and qualities, cut into strips half an inch in width, were laid in successive layers, running in various directions, by means of glue, cement, shellac, and many other compounds, until, after a long series of very discouraging experiments, a jacket of pure jute fiber, free from clay and wood-pulp, was finally produced which the accompanying cut very excellently represents.

FIG. 1.

The ideal paper jacket.

This appliance was no sooner fitted to the patient than all her objections to the use of a spinal support vanished. It was neat, cleanly, thin, light, strong, inconspicuous, readily removable, and comfortable to the wearer. Only one thing more was necessary. It must be capable of expansion during respiration, and yet immediately contract and not lose its hold on the thorax during expiration. This requirement was met by dividing the jacket into two parts on the axillary lines, and lacing them together with an elastic lacing. This was done and the jacket seemed to meet every reasonable demand.

The patient was ordered to remove the jacket at night on retiring, and *not* to put it on in the morning till the spinal column had been thoroughly extended by suspension after the method already described. She was also given a thorough training in light gymnastics to strengthen *all* the other muscles of the body as well as those of the back. The result was very gratifying. She experienced immediate relief from the pain, and within two weeks returned to her work in a millinery establishment, where she has ever since remained. As her shape has changed somewhat from time to time, other jackets have been made for her with equally good results. Since then many other jackets have been made for other patients with lesions of a similar character, and always with the same success.

Compared with other orthopedic appliances intended to furnish a proper support for the spine when the lesion is in the lower dorsal or lumbar region, I believe that for the following reasons the method described is the best yet devised:

1. It is the thinnest, lightest, and strongest jacket, furnishing sufficient support, ever made. Though its average weight is only about twelve ounces, and its average thickness less than three thirty-seconds of an inch, yet it is able to sustain a weight of over two hundred pounds.

2. It is impervious to moisture; hence, does not absorb perspiration, and consequently does not become unbearable to the wearer.

3. A lady can wear it in place of the ordinary corset without "letting out" her dresses or making any changes in her ordinary wearing apparel.

4. The most muscular laborer engaged in the severest kind of manual labor finds it capable of sustaining any necessary strain.

5. It furnishes a more convenient, efficient, and durable support for the jury-mast, shoulder-brace, abdominal supporter, truss, leg-brace, etc., than any other kindred appliance.

6. It does not disintegrate and soil the clothing like plaster, or rust out like "alloy wire," or soften like felt.

7. It affords a solid base from which to furnish direct pressure to remedy any existing or developing deformity, yet accommodates itself to the action of the muscles of respiration.

8. It can be easily modelled to fit any exaggeration of anatomical contour, and can be ventilated by means of eyelets to any extent.

9. It is practically indestructible. The patient can never wear it out.

10. Its cost is no more than that of any other first-class appliance.

Soon after perfecting the paper jacket, I extended the application of paper to the making of splints. The result was as gratifying as in the case of the jacket.

The preparation and use are best illustrated by the following case:

On September 9, 1891, Carl W., nine years of age, while playing in the street, was run over by a heavy wagon and sustained a double compound comminuted fracture of the right leg. I saw the patient within a few minutes after the accident. No important vessels or nerves were injured, and after the usual antiseptic dressing had been applied, the leg was put up in a Levis splint (nickelled electroplate). In four days, the swelling having subsided, a plaster bandage was applied, immobilizing both knee and ankle, but leaving a fenestra over the seat of the injury.

Several difficulties immediately presented themselves: the joints could not be immobilized for an indefinite time without fear of ankylosis; the plaster bandage could not be removed to make passive motion of the joints without great trouble and danger of displacement of the bones; the limb could not be bathed and the accumulating scales of epidermis removed, for a similar reason; the wound could not be re-dressed without the disintegrating plaster falling into it, unless much precaution was used.

Fig. 2.

The ideal paper splint.

Indeed, the annoyance became so great that I decided to make a splint of paper on the same general plan as had been used in the construction of the paper jacket. Accordingly, a shallow box, with adjustable sides and ends, was made ready, and filled half-full of prepared plaster. Into this plaster the limb—nude, shaved, oiled, and thoroughly extended—was lowered, until the plaster covered the lower or posterior half of the limb. As soon as the plaster set, a brush filled with melted paraffin was passed over it. Over this enough plaster was poured to cover the limb. As soon as the plaster had set, the sides and ends of the box were let down, the

upper half of the mould was removed, and the leg was carefully lifted out of the lower half. The whole time occupied was less than fifteen minutes. The upper half of the mould was returned to its place, the box restored, and a perfect mould of the limb was thus made ready. A cast made from the mould was used as a model on which to lay the paper for the splint. The accompanying cut represents the splint after it had been cut from the cast and bound. Hooks were inserted in both sides of the splint.

As soon as this splint was adjusted to the limb, the disadvantages of plaster were more readily apparent. After using it for ten weeks in one of the worst fractures that I have ever seen, the following points of superiority were demonstrated:

1. Since it is made on a plaster cast of the limb itself, it must fit perfectly.

2. Since the cast was made while the limb was fully extended, it follows that this position of extension will be maintained as long as the splint is carefully adjusted.

3. Since it weighs less than a pound, is only three thirty-seconds of an inch thick, and yet is able to sustain a weight of over two hundred pounds, it follows that it is the lightest, thinnest, and yet the strongest splint ever made.

4. Perfect immobilization of a joint can be secured, yet the joint can be inspected at a moment's notice, since either the anterior or the posterior half can be removed without disturbing the other, and because either half of the splint is able to keep the limb in its proper position, for a limited time, without the aid of the other.

5. Both the outer and the inner surfaces are waterproof; hence there is no absorption of perspiration, no odor, no fear of getting the splint wet while bathing or dressing the limb.

6. It offers no obstacle to making passive motion of the joints at any time, since by removal of the posterior half the knee can be flexed or the foot extended at will without fear of displacement.

7. In compound fractures it simply becomes necessary to remove that half of the splint which covers the wound, and irrigate and dress it, with the confident assurance that the other half will hold the limb securely.

8. During the period of convalescence the patient can wear his usual clothing over the splint.

9. The uniform pressure checks muscular spasm and lessens the tendency to swelling and edema.

10. There is no great difficulty to be overcome in the preparation of these splints, and any first-class instrument-maker should be able to furnish them with facility.

NEUROMA.[1]

(With Report of a Case.)

By EDMUND J. A. ROGERS, M.D.,
PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF DENVER; SURGEON TO THE ARAPAHOE COUNTY HOSPITAL, ST. LUKE'S HOSPITAL, ETC.

WHEN, in connection with the rarity of nerve-tumors, we consider the complex structure of nerve-tissue, we can easily understand the confusion that exists in the nomenclature and classification of these tumors, and their generally undetermined pathological structure. Thus, in an ordinary nerve-trunk we have the nerve-fibers proper surrounded by their medullary coats of myelin, this limited by the neurilemma, set in the endoneurium, and this again surrounded by the laminated perineurium, and all included in the coarser connective tissue of the epineurium. Each differs in its structure, and each is liable to the pathological changes to which all tissues are subject, each is liable to its own peculiar changes, and any two or all of them are liable to be attacked at the same time. Add to all this the difficulty of demonstrating axis-cylinders and other nerve-structures satisfactorily by ordinary histological methods, and what wonder that we seldom find two nerve-tumors described as being similar in structure?

The confusion begins in the very title. The clinical surgeon has few means during the life of a nerve-tumor to diagnosticate its structure, whether of fibrous tissue, or of pure nerve-tissue only, or mixed. He has therefore, of necessity, come to classify all tumors connected with and inseparable from nerves as neuromata.

On the other hand, pathologists, and especially the German pathologists, insist that it is highly improper to call a tumor a neuroma that has no true nerve-tissue in it.

We must, however, give some name to these tumors before they get into the pathologist's hands, and in the absence of a better we shall, therefore, adhere to the old definition that all tumors connected with and inseparable from the nervous system are neuromata. But when we come to a true scientific classification we find these growths divided into two great classes, not always distinct from each other, true neuromata and false or spurious neuromata. In the former the characteristic and predominating tissue is nerve-tissue, while in the atter the nerve-elements are absent, or occupy only an accidental or subordinate place. All neuromata are rare, but true neuromata are found much more seldom than the spurious.

True neuromata may be divided into three classes:

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[1] Read before the Colorado State Medical Society, June, 1891

1. The ganglionic, medullary, or cellular neuromata.

2. The fasciculated or fibrillar neuromata, and—

3. The plexiform neuromata.

The ganglionic are found almost entirely in the nerve-centers, and are made up chiefly of ganglion-cells and naked axis-cylinders. They are rare, and are not of surgical importance.

The second variety, however, is of more interest. Its characteristic tissue is constituted of ordinary nerve-fibers set in connective tissue, the arrangement of the two varying greatly in the different specimens. As long as the connective tissue does not too greatly predominate and is related to the nerve-elements as its matrix, the growth is still called a true neuroma. There are said to be some tumors in this class, although they are very exceptional, in which the constituent nerve-fibers are non-medullated. Such tumors are consequently termed amyelinic, to distinguish them from the myelinic neuromata, or those having medullated fibers.

The usual seat of neuromata is in the course of the spinal nerves, principally in the extremities, but they are sometimes found on the cranial, and very rarely on the sympathetic nerves. The growths usually appear as simple spindle-shaped or oval enlargements of the nerve, are usually symmetrical in shape, sometimes flattened, and of any size up to or even larger than a hen's egg. They are said to be generally grayish in color, and firm and elastic to the touch. They seem to be produced by a local hyperplasia leading to an hypertrophy of the nerve-structures, and can often be traced to an irritation or injury to the nerve. This injury is sometimes subcutaneous. That the lesion may first cause simple inflammatory changes, and these lead to hypertrophic changes, there can be no doubt. It is said that neuromata do not always invade the entire nerve-trunk, but that they may grow upon only a section of it, crowding the remainder to one side. To this class belong the terminal, traumatic, or amputation neuromata found in stumps. These tumors are said to be usually connected to the cicatrix by small radicles. They are generally small in size, and only exceptionally cause any inconvenience.

We find placed in this class those tumors that develop in the peculiar constitutional condition that is characterized by the formation of a great number of nerve-growths, although they may be more properly fibro-neuromata. These multiple neuromata sometimes develop in immense numbers—in one case estimated at over two thousand. They sometimes appear only on one nerve, sometimes on a single set of nerves, and sometimes throughout the entire nervous system. This condition occurs almost exclusively in males, and may perhaps be due to some hereditary neurotic taint. It is not infrequently seen in cretins, and a few cases have been encountered in idiots.

The third variety mentioned—plexiform neuromata—includes those rare congenital growths made up of varicose-like convolutions of hypertrophied nerve-cords. They are so rare as yet to have no clear distinctive description, and are often confused with other similar tumors. They may lie deeply, or be immediately beneath the skin. They most frequently occur on the branches of the fifth nerve, but have been found in various other locations.

Nerves are liable to all the pathological changes that occur in other tissues, and these localized changes constitute the usual cause of the simpler false neuromata. Of these by far the most common is the fibroma. This may origininate in any of the fibrous tissues of the nerve, and may grow to a considerable size without affecting the nerve-tissue proper. Thus, if in the epineurium or laminated perineurium, it may grow only on one side of the nerve as a pedunculated or semi-detached growth, or it may completely encircle the nerve, forming a cylindrical sheath, which may be easily dissected away. If it arises in the interior connective tissue it may crowd the nerve to one side, which will then pass in a sort of groove in the tumor; or, if still more central, it may divide the nerve into several fasciculi that may become widely separated, but may still remain distinct and easily separable from the fibroma. These growths are generally harmless, and seldom interfere with the functions of the nerve. Clinically, they closely simulate the fibrillar neuromata, but are apt to be more globular and not so spindle-shaped as the true neuromata; they may be more laterally attached to the nerve, and hence more movable.

The fibromata, again, are clinically closely simulated by the myxomata, which are said to be the next most frequent in occurrence of the non-malignant spurious neuromata. Nerve-cysts are also occasionally found, as are also such mixed tumors as cysto-myxomata, fibro-myxomata, lipomatous myxomata, etc. Spurious neuromata may also be due to malignant diseases of the nerve. Of these, sarcomatous growths are the most common, while primary carcinomatous tumors are very rare indeed. Gummata are rare in nerves, except in the cranial nerves. In leprosy a peculiar true neuroma is often found present, and may play some part in the pathology of the disease.

Closely connected with neuromata, but not properly belonging to them, are the painful subcutaneous tubercles—the neuromata dolorosa of Virchow—of which much has been written. These are little nodular bodies, the seat, or rather the center, of excruciating intermittent and remittent pain and tenderness. A drawing sensation, not definitely

localized, is also sometimes experienced about them. They vary in structure, being sometimes described as simple fibromata, sometimes like true neuromata, but they are generally much more complex. They are not always found to be connected with the nervous system, but, of course, are probably so connected. It seems reasonable to suspect that they are altered or hypertrophied superficial nerve-endings, although this has not yet been demonstrated. They occur most frequently on the arms, back, and neck, but may occur at any part of the body. They are much more frequently found in women than in men. Where not too numerous, treatment by simple extirpation is satisfactory.

Neuromata in general have no characteristic symptoms. When situated on a large nerve-trunk there are generally more or less defined neuralgic pains, sometimes terribly severe in intensity, intermittent and remittent in occurrence, and seemingly affected by external and constitutional circumstances, as in true neuralgia, or there may be only a deep, dull aching. Later on, sensory symptoms, such as formication, tingling, and numbness, and such motor affections as twitchings, tremors, and weakness may develop. Actual sensory and motor paralysis, if seen at all, usually are late in appearance. Indeed, one is surprised to find how few and how slight the symptoms are, and the symptoms do not seem directly to depend upon the size of the tumor.

In heterologous growths, when the nerve is invaded and destroyed, we, of course, expect to find more rapid growth and greater loss of function in the parts than are found in simple growths. When a tumor develops in a bony canal, we expect paralysis below from pressure. Occasionally, reflex symptoms are encountered, such as pain and muscular contractions. Even epileptiform convulsions have been stopped by the removal of a superficial neuroma. When the symptoms are marked, weakness is generally noticed in the muscles supplied by closely associated nerves.

Neuromata cannot be diagnosticated from symptoms alone. When the growths are superficially situated they are sometimes found to be tender, and manipulation may cause pain in the distal course of the nerve. But even these features are remittent. In idiopathic neuromata the tumor may vary in size from time to time, and may even disappear. We are assisted in diagnosis by finding that the tumor is in the course of a nerve, and that it is freely movable to one side of the nerve, but fixed in the other direction. Pain and tenderness in the tumor, and in the nerve beyond, can generally be abolished by pressure on the nerve above the tumor. Non-traumatic, non-malignant neuromata are very slow in development, but they may occur at any age, and may grow to any size. Virchow states that they are found more frequently in the tuberculous and scrofulous diatheses. They are benign, but true neuromata have a tendency to recur after removal.

When treatment is demanded, extirpation is alone of benefit, but should not be lightly undertaken. In case of multiple neuromata it is unwise to attempt removal, and this should be undertaken only when some one local tumor is causing great and persistent distress. In these multiple growths the prognosis is generally good, as they appear seldom to directly affect the duration of life.

The case that I present herewith is one of much interest:

Miss Jennie S., unmarried, twenty-three years of age; is a native of Sweden, but came to Kansas twelve years ago. In childhood she had attacks of quinsy, and when first in Kansas had malaria severely. She gives no history of any other disease, and I can discover no tuberculous or scrofulous taint, and no specific history. She was well and hearty, when in May, 1889, she struck her arm on the sharp corner of an ice-chest. She scraped the skin, and suffered a severe bruise over the inner side of the lower portion of the arm. The part was sore for about a week, when all symptoms disappeared for about two months. The girl then began to have shooting pains from the seat of the injury down into the little finger and hand. Swelling or other symptoms were not observed. In the following fall, as the pains were growing worse, she placed herself under medical treatment. During the winter, the pains and "queer" sensations in the arm and hand progressively increased, and at night became so severe as to prevent sleep. In the spring of 1890, while on her way to Denver, she noticed the arm swelling about the site of the bruise; the pains became intense, and soon the hand also swelled. The swelling in the arm was said to be an abscess, and was poulticed, but was never opened. The swelling gradually subsided, but the little finger remained blue, weak, painless, without feeling, and seemed in the way. As the swelling left the arm, a small lump remained. Soon the pain began to return, and became very severe at night, the tumor gradually increasing in size. As it did so, the hand got weaker and more awkward; it was numb and tingling, and there was no feeling on the inner side, so that the girl was constantly burning and hurting it unconsciously. She says that she noticed wasting of the inner side of the hand, the ball of the thumb, and between the bones of the hand. This grew worse gradually, the hand becoming very awkward and in her way. On February 5, 1891, she called upon Dr. Eskridge, who examined her and made the following notes of her condition, which he has kindly allowed me to use here:

"Sense of touch was completely lost in the little finger of the left hand, and in the corresponding portion of the hand to the wrist-joint. Tactile sense was present on the ring finger on both the

inner and outer surfaces. Tactile sense normal over the arm and forearm. Pain-sense affected only in the little finger, where it was simply lessened, not abolished. Temperature-sense in the same region lessened. The little finger could neither be flexed nor extended. It remained in a semi-flexed position, on account of rather firm contractions of the flexor muscles. It was impossible for her to abduct or adduct the little finger. The grasp of the left hand was very weak, and the whole hand was moved slowly and awkwardly. Only the muscles of the little finger were tested by electricity, and these were found partially degenerated."

Dr. Eskridge subsequently advised her to go to the County Hospital, which she did, and was there placed under my care.

I first passed an exploratory aspirating-needle into the tumor, as there seemed to be obscure fluctuation in it, but the only result was to cause intense pain—the old pain, she said—down into the little finger.

On February 24th we operated by cutting down longitudinally over the tumor, which was found to be a symmetrical spindle-shaped enlargement of the ulnar nerve, its center being about three inches above the elbow. The tumor itself was about two and a quarter inches long and two inches in circumference, but the entire nerve, as far as it was exposed in both directions, was found much hypertrophied and hardened. No line of demarcation between the nerve and tumor could be found, the latter being to all appearances simply an enlargement of the former. After dissecting the tumor perfectly free on all sides it was incised longitudinally, and gradually split quite in two. Within a definite capsule a grayish-white substance was found, growing softer toward the center, and closely resembling the white substance of the brain. In the center was a cavity filled with a thick, gray, grumous substance, probably desiccated pus. The matter appeared homogeneous throughout. The nerve was then divided just above the tumor, and the tumor drawn up so as to stretch the lower portion of the nerve as much as possible. The nerve was then divided just below the tumor, and the extremities still not approximating, the upper portion was grasped by the fingers and drawn down forcibly as far as possible. Although two and a half inches of the nerve had been removed, the extremities were then brought to within three-eighths of an inch of each other by means of two strong catgut sutures passing completely through each nerve-extremity at right angles to each other. The wound was then closed entirely, and the arm from the shoulder to the knuckles placed on a straight splint. The patient was kept in bed. On the second day it was found that some sensation had returned in a small area on the little finger, and that there was some power of motion in the finger. The wound healed by first intention, pain disappeared entirely at once, and though the hand was swollen for some time, improvement soon set in and has ever since continued. The straight splint was kept on for about five weeks, but the hand was not allowed to be put to any use for seven weeks. It was then treated by massage. By rapid and constant improvement, strength and sensation almost completely returned.

At the present time the hand appears normal, except that the muscles of the third and fourth intermetacarpal spaces seem still wasted. The grip is strong, and the hand seems as useful as it ever was.

I here give the report made by Dr. Lobingier, the pathologist of the hospital, to whom the tumor was submitted for examination :

"The tumor belongs to the class of fibrillary myelitic neuroma, and consists of collections of nerve-fibers bound together by connective tissue, running in some instances directly and in other places tortuously through the tumor. Consequently some of the nerve-fasciculi fall directly in cross-section, whereas others appear wavy and parallel, or branched, being cut longitudinally. Certain sections show a preponderance of fibrous tissue, richly studded with leucocytes. One area, which appears in almost every section, is remarkable, in that the nerve-bundles are in various stages of waxy degeneration, and this, in cross-section, appears dense and homogeneous. Owing to the fact that the tumor was hardened before it came into the demonstrator's hands, it was impossible to stain the axis-cylinders, as could have been done in the fresh specimen with gold chloride. The medullary sheath and white substance of Schwann may be made out in the cross-sections of the fasciculi. The neoplasm is remarkable for its excessive vascularity, and the waxy degeneration of certain nerve-studded areas, an unusual phenomenon."

What the ultimate outcome of this interesting and perhaps unique case will be remains to be seen. As we have said, these tumors tend to recur. In this case a much-thickened and greatly-stretched nerve was sutured, leaving a considerable interval. These conditions, I fear, give ground for apprehension.

I have little doubt that the blow two years ago set up a traumatic neuritis, which resulted in the extensive thickening, and later in a local intra-neural suppuration. This became quiescent after so permanently damaging the nerve as to make its functions hopeless without surgical interference.

MECHANICAL INFLUENCES IN PELVIC DISORDERS.[1]

By KATE REYNOLDS LOBINGIER, M.D.,
of Denver, Colorado.

It is written that "man is fearfully and wonderfully made." Must we confess that woman is fearfully ill-made? Have all mechanical and physical laws been disregarded in her construction, so that pelvic disease is a necessary sequence? There are vigorous women that have the strength and endurance of men. If the constructive idea is at fault, why should the uterus of one woman be well sustained, and that of another sink like lead? We

[1] Read before the Colorado State Medical Society, June, 1891.

have here a problem in physics. If we would solve it, we must do so by the general principles of mechanics. If we accept this truth, we shall be willing to search patiently for natural principles of support, but, if we regard pelvic disease as inevitable, we shall be satisfied with palliative measures.

Pelvic disorders may be grossly classified as displacements and inflammations. In discussing mechanical aids we shall have most to say in reference to malpositions, but it is understood that whatever restores normal position helps the pelvic circulation, thus removing the cause of inflammation and acting as a direct curative agent.

In considering aids for the correction of pelvic deformities, it is common to regard the pessary of paramount importance. No discussion of the subject would be comprehensive that failed to consider this popular instrument.

It is easy to multiply objections against the pessary, but one most rarely insisted upon is the use of this instrument to the neglect of fundamental physiological laws.

Among other objections to the pessary are the following. In many cases the instrument cannot be tolerated, in others it is useless, and there are cases in which it does actual harm:

1. When chronic peritonitis exists, or a prolapsed ovary is present, the pressure of a foreign body is too painful to be endured.

2. If a pessary is not carefully selected and properly adjusted, so as to receive support from the bony frame-work, it will lie idle and useless in the vagina.

3. An effective pessary will in time cause distention and lessened tissue-tone. The vaginal wall will lose elasticity, and become flaccid, without retaining-power.

4. In time the patient becomes enslaved to the use of the pessary, and this fact must be considered when it is remembered that, sooner or later, there will come an end to the utility of the instrument.

5. Sometimes a foreign body, like the pessary, acts as a constant source of irritation. The catarrhal discharge that results, and the retention of this septic material, may cause softening of the tissues and actual imbedding of the instrument.

6. Skilfulness and care will overcome many objections to the pessary, but the fact must always remain that it is a bad mechanical principle to support a body like the uterus by a prop from below. If the uterus were enclosed in a bony cavity and shut off from all connection with other organs, a small instrument like the pessary might be sufficient; but remember that we have an immense weight of superimposed viscera bearing down from above, and the pessary must perform a task akin to that of Atlas with the earth upon his shoulders.

To support the earth with a prop is an ancient and crude idea. It took years for the truth to develop that the sustaining force is far distant in the sun. The analogy is good. The main sustaining force of the uterus is not located in the pelvis, but acts from a distance.

Is it expedient to rule the pessary out of practice because objections may be urged against it, and because the instrument is capable of misuse? In answer to those that reject pessaries, Thomas says: "Pray, then, what *do* you use?" It is well to remember that an elaborate nihilism is often as disastrous as the too ardent advocacy of a questionable measure. It must be admitted that a certain benefit accrues from the temporary employment of the pessary as an adjunct to other and more rational methods of treatment. When great congestion exists, the elevation of the uterus by means of a well-adjusted pessary allows the blood-current to resume its normal course, the size and weight of the organ is reduced, and the pessary acts substantially as a curative agent. The instrument may also prove a valuable palliative measure by relieving tension on the nerves and the attending suffering.

The influence on the patient's mind must also be considered. It is often true that the introduction of a pessary is followed by instantaneous relief. The patient is greatly encouraged, and may be induced to lead a more active open-air life. The benefit to her general health thus derived may be a valuable element in establishing a permanent cure. The facility with which temporary relief may be given and the ease with which the pessary may be applied make this instrument popular both with physician and patient. The effort necessary to gain proper coöperation on the part of the patient in securing adequate support to the uterus by other and more permanent means makes resort to this instrument a natural compromise. Many of the arguments adduced against the use of internal supports apply with equal force to external support by means of the abdominal bandage. Both are palliative and temporary, and this is especially true of the external support. It would be idle to argue that an abdominal bandage is in any sense curative, but the lifting up of the viscera relieves the dragging sensation that is often the source of much discomfort. It is not uncommon for women to assume the responsibility of wearing such a supporter without the advice of a physician, and with no other assurance of its propriety than the temporary comfort afforded in walking and standing. A patient may become so wedded to this means of relief that she is afraid to step on the ground without such aid, and it is true that the longer she wears the bandage the weaker do her muscles become. The application of a splint to the brachial region will cause atrophy and

incompetency of the biceps, and the continued use of the external support is in its effect on the abdominal muscles just as pernicious. The evil results of the bandage are most strikingly seen in puerperal women. The uterus is large, the ligaments yielding, and the bandage tight. The patient believes her form is being preserved in the best possible manner, but what is really the result? The uterus moves in the direction of least resistance, and the fundus finds a resting-place in the hollow of the sacrum; retroflexion, subinvolution, and metritis are likely to be the unfortunate sequelæ. This serves to illustrate what the tendency may be in a non-puerperal patient, if there is great congestion of the uterus and laxity of the tissues.

A mechanical agency more effective than the best supporter is *gravity*. This force is resistless, and most of the physical ills of womankind have been ascribed to its pernicious influence. A factor thus potent in the production of pathological conditions must be equally powerful in affording a remedy when the conditions are reversed. Water rises in an artesian well, forced up by the gravity of water in the adjacent hills. A loaded car is drawn up the steepest mountain-side by the weight of a descending car. Why may not the force that caused prolapse be made the effective agent to restore correct position?

As an illustration of the excellent results obtained from gravity, we may instance the retroflexed, pregnant uterus. Skilful manipulations from below may prove entirely futile in rectifying this condition. But if the patient, resting on her elbows, is by a nurse lifted to an angle of forty-five degrees, the uterus will fall forward. If this exercise is repeated every day till the fundus has risen above the promontory of the sacrum, a complete cure is effected, and the distressing effects of incarceration are avoided. A remedial agent is sometimes effective in proportion to its simplicity.

In cases in which the pelvic organs are congested and misplaced, it is remarkable what excellent results may be obtained by the persistent use of the knee-elbow and similar positions. The blood-current at once becomes more active, the nerves are relieved of tension, and pressure on neighboring structures is removed. Reclining with the hips elevated, lying in the Sims position, or on the face, are palliative measures of great value.

The tendency of gravity is to remove the causes of disease, but, at best, it can be only an intermittent force. Nature's method of sustaining should act continuously.

The *suction-force of respiration* is a power that is constantly operative, and it is entirely competent to regulate the movements of a refractory uterus. With the aid of a Sims speculum, under favorable conditions, a to-and-fro movement of the uterus may be observed. If the waist is constricted, or the breathing feeble, this motion is slight or absent. But if the respirations are vigorous, it will be noticed that at every expiration the cervix is drawn up out of sight. This "breathing" of the uterus is necessary to pelvic health.

The human trunk is substantially constructed on the model of a suction-pump. We may consider the chest, abdominal, and pelvic cavities as one continuous tube. In this cylinder the diaphragm moves up and down after the manner of a piston. In a pump some thirty feet of water is lifted. A force that has this power ought certainly to lift the viscera upward for several inches. Suction-force is the power that Nature has provided for the support of the pelvic contents.

The organization of a woman is not structurally defective, but the adjustment of parts is peculiarly delicate, and any interference with normal action is followed by disease.

Over-exertion has been assigned as a cause of uterine disorders, but as a matter of fact we find that women of sedentary lives suffer more frequently than those that lead lives of normal muscular activity. A seamstress is more apt to be afflicted with pelvic disease than a housemaid. Any exercise that keeps the blood in active motion must have a derivative influence on the pelvic viscera; but exercise of the upper extremities is most directly beneficial in the prevention and cure of uterine disease. The close connection between the arms and pelvis is evident. In the simple exercise of standing with the hands clasped behind the head, the chest-walls are lifted outward and upward by the action of the great pectoral muscles attached to the humerus, as a result of which the chest capacity is augmented, the diaphragm rises, the abdominal contents have room to ascend, and those of the pelvis follow.

Sylvester's method of artificial respiration illustrates the extreme value of arm-movements in cases of feeble breathing. This exercise is itself an admirable one for its effect on the pelvic contents.

But it is clear that any exercise intended to develop respiratory power must utterly fail if there exists an antagonistic force capable of nullifying every effort. The corset has been cordially condemned for its restrictive influence on respiration, but, in addition, many women wear tight bands equal to five yards of continuous bandage. Attached to these bands there are often from six to seven pounds of heavy clothing, exerting direct pressure downward.

Suppose we have a suction-pump in which the cylinder is somewhat yielding. Around the middle, were the piston works, let us put on stiff splints and bind them fast with five yards of continuous band-

age, then suspend from the bandage seven bags of shot that weigh each a pound. Now try to move the piston. The excursions are of small amplitude, but the wonder is that the piston moves at all. Nature meant the uterus to be sustained, but she made no allowance for Parisian fashions. The lifting upward of the viscera implies that there must be space enough below the diaphragm for the abdominal contents to pass freely upward. Any mechanism whereby this space is limited must in a double sense prove injurious. Not only is free movement of the respiratory area prevented, but the abdominal viscera are held down by hydrostatic pressure on the pelvic organs. Abdominal respiration in women must be restored before we can successfully combat the many forms of uterine disease.

The argument presented for discussion is briefly as follows:

1. Mechanical remedies are important, and local applications are not sufficient.

2. The four mechanical aids considered are the *pessary*, *abdominal bandage*, *gravity*, and the *suction-force of respiration*. Of these, the first two are least effective, because they operate on incorrect mechanical principles. Their aid is temporary and palliative, and their continued employment subject to abuse.

3. *Gravity* is a powerful palliative agency, and its tendency is curative, but it is a force that cannot be employed continuously, and it is directly dependent on the patient's will.

4. The only mechanical power that can be in constant operation, and is strictly curative in uterine disorders, is the *suction-force* of unrestrained respiration. This power is fundamentally correct in principle, it operates independently of the patient's will, and is the only force adequate to successfully antagonize the prolapsing tendency of gravity.

5. Any mechanical treatment must fail of complete success if it ignores the upward respiratory lift of the viscera, dependent on unrestricted action of the diaphragm.

A CASE OF BILATERAL LUMBAR ABSCESS ASSOCIATED WITH POTT'S DISEASE.[1]

BY J. K. YOUNG, M.D.,
OF PHILADELPHIA.

THE following case illustrates the result of conservative treatment of a very severe bilateral lumbar abscess accompanying Pott's disease in a young child.

J. P. B., a male child, four years of age, referred to me January 28, 1890, by Dr. William E. Hughes, had been in perfect health until the previous summer, when he fell down a step, striking against a stove. The mother subsequently noticed a small projection in the lumbar region, and the child complained of pain in the knee. Examination revealed caries of the spine, with a projection of the spinous processes of the eleventh and twelfth dorsal and the first lumbar vertebræ. A Taylor spinal assistant was applied and worn, and internal and local remedies were employed. Subsequently a very large abscess developed on the left side; this was twice aspirated, and still later a smaller abscess developed on the right side, and was allowed to open spontaneously. Full antiseptic dressings were employed throughout, and at present there is a very small superficial sinus unhealed. The vertebræ are ankylosed, and the child now enjoys good health, and runs and plays as other children.

The subject of lumbar and iliac abscesses has already been so ably discussed that in presenting the present case of recovery from severe bilateral abscess it will only be necessary to refer to the seat of the disease and the importance of the fasciæ in determining the course, exit, and prognosis of purulent collections in the lumbar region. It is a well-recognized fact that abscesses in every region of the spine follow a pretty definite course and termination, the direction and exit of the pus being influenced by the seat of the lesion and by the fasciæ and aponeuroses. Thus, in the cervical region, the deep cervical fascia plays a most important part in determining whether the abscess shall take an anterior course and open into the posterior wall of the pharynx; whether it shall burrow beneath the deep fascia into the thorax as a mediastinal abscess, to terminate by breaking into the trachea, esophagus, or through an intercostal space; or whether it will pass laterally between the longus colli and scaleni muscles, and will thus open posteriorly to the sterno-mastoid upon the side of the neck.

Treves, Jacobson, Hilton, and others have called especial attention to the great importance that, from a surgical point of view, attaches to the complex arrangement of the cervical fascia and Koenig, Henke, Saltman, and others have pointed out the importance of the fasciæ generally in determining the direction and pointing of abscesses from whatever cause. In the dorsal region, the strong fasciæ binding the ribs together determine whether the pus shall find its exit posteriorly upon the skin of the back or sides, a short distance from the spine, or whether it shall pass beneath the ligamentum arcuatum internum, and enter the psoas sheath to terminate in Scarpa's triangle beneath Poupart's ligament. In the lumbar region it does not appear to me that sufficient attention has been given to the importance of the fasciæ in determining the course of lumbar abscesses from caries of the vertebræ and

[1] Read before the American Orthopedic Association at Washington, September, 1891.

the effect of this change of course upon the prognosis of these cases.

The usual course for abscesses in the lumbar region is in one of four ways:

First, to be directed to the iliac region along the aorta and external iliac arteries, to terminate as a gluteal abscess; second, to enter the psoas sheath and become a psoas abscess; third, to burrow through the fasciæ of the quadratus lumborum and the internal oblique muscle, to appear on the surface between the external oblique and latissimus dorsi at the outer border of the erector spinæ muscles; or, fourth, to gravitate beneath the internal iliac muscles over the posterior brim of the pelvis, perforating the great sacro-sciatic foramen, to appear as a gluteal abscess. (See table.)

The variations of the course and termination of a lumbar abscess depend, first, upon the seat of the lesion, and second, upon the attachment of the fasciæ. In caries of the spine it is a well-recognized fact that the tuberculous process is usually limited to the bodies of the vertebræ, the articular and spinous processes never being primarily affected, and but rarely secondarily involved, their compact structure apparently protecting them. In exceptional instances the lesion is superficial and limited, the intervertebral cartilages escaping, but as a rule extension occurs by contiguity of structure until a considerable number, even all, of the vertebræ may become involved.

In examining a sectional diagram of the lumbar region it will be observed that the sheath of the psoas muscle and the lumbar fascia are the most important structures in this connection. The sheath of the psoas is a thin fibrous membrane derived from the iliac fascia—attached above to the ligamentum arcuatum, laterally by a series of arched processes to the intervertebral substances and prominent margins of the bodies of the vertebræ, and continuous below with the iliac fascia. The lumbar fascia divides into three layers, inclosing the quadratus lumborum, multifidus spinæ, and erector spinæ muscles, and giving attachment to the internal oblique. Its anterior and middle layers are attached to the transverse processes, and its posterior layer to the spinous processes. Above, its anterior layer is attached to the lower border of the last rib, forming the ligamentum externum. The posterior surface of the psoas muscle is separated from the quadratus lumborum by the anterior layer of the lumbar fascia—a very thin fascia—but the greater part of the muscle is firmly supported behind by the erector spinæ muscles. In front, the quadratus lumborum is very thin, and offers but little resistance to the exit of the pus. If the abscess find exit upon the surface of the vertebræ anteriorly to the attachment of the psoas fascia, it will terminate by burrowing along the great vessels, or become an iliac abscess; if it open posteriorly to the psoas sheath it will burrow backward and laterally along the middle layer of the lumbar fascia, separating the quadratus lumborum from the internal oblique, through the internal oblique, and between the external oblique and latissimus dorsi, to appear at the outer border of the erector spinæ muscles.

This was the course of the abscesses in the case reported. The sheath of the psoas and the lumbar fascia, as thin as they are, are nevertheless very important factors in determining the direction, and with the direction, the prognosis of lumbar abscesses. So important do these fasciæ appear to the writer, that he would suggest a division of lumbar abscesses into two classes, external and internal, their relation to the sheath of the psoas fascia and the anterior layers of the lumber fascia determining their position.

Variety.	Course.	Exit.
Cervical	*a.* Anterior.	Into posterior wall of pharynx.
	b. Burrow beneath deep fascia into thorax as mediastinal abscesses	Into trachea, esophagus, or through an intercostal space.
	c. Laterally between the longus colli and scaleni muscles.	Posterior to the sterno-cleido-mastoid.
Dorsal	*a.* Burrow posteriorly.	On the back or side; a short distance from the spine.
	b. Within psoas sheath.	Beneath Poupart's ligament in Scarpa's triangle.
Lumbar	*a.* Enter psoas sheath	As psoas abscess.
	b. Burrow between the fasciæ of the quadratus lumborum and abdominal muscles, through the internal oblique.	Posteriorly beneath the external oblique and latissimus dorsi at the outer border of the erector spinæ muscles.
	c. Gravitate beneath the internal iliac muscles over the posterior brim of the pelvis, perforating the great sacro-sciatic foramen.	Gluteal abscess.
	d. May be directed to the iliac region along the aorta and external iliac arteries.	Gluteal abscess.

LYMPHANGIOMA CIRCUMSCRIPTUM.[1]

By M. B. HARTZELL, M.D.,
of Philadelphia.

Under the name Lymphangiectodes, Tilbury Fox first described a curious, chronic, non-inflammatory disease of the skin characterized by the presence of peculiar vesicular and wart-like lesions,

[1] Read before the American Dermatological Association, September 25, 1891.

occurring in groups and patches.[1] Subsequently, Mr. Jonathan Hutchinson presented two cases of a similar kind before the London Pathological Society, naming the disease lupus lymphaticus. More recently a few other cases have been reported, chiefly by English observers—but one, so far as the writer is aware, being found in American medical literature. Because of the rarity and unusual features of the disease, the following case, which has been under observation during a considerable period of time, has seemed of sufficient interest to report:

R. M., a boy, fifteen years of age, has since early infancy had an affection of the skin situated upon the left shoulder, and consisting of a half-palm-sized patch of flat, irregularly shaped vesicles, varying in size from that of a pin head to that of a split pea, arranged in small groups each containing from six to eight discrete lesions. A considerable number of these vesicles, when examined closely, are seen to contain within their interior minute tufts of capillaries, which give to them a reddish hue. These lesions remain unchanged for many months at a time, but gradually disappear through absorption of their contents, new ones appearing from time to time to take their place. The contents of the lesions are a clear, pale-yellow serum. Occasionally, however, owing to the rubbing of the clothing, the minute vessels within some of the vesicles are ruptured, and the contents are then mixed with blood. The disease is unattended by subjective symptoms of any kind, there being neither spontaneous pain nor tenderness on pressure. At no time in the history of the eruption have there been any evidences of inflammation. During the past year, the entire patch has slowly moved anteriorly; the lesions have in great part disappeared from the scapular region, and now occupy the summit of the shoulder. The former site of the eruption shows some slight atrophy of the skin, with faint pigmentation, and here and there a few small, isolated papules. The skin between the vesicles shows no abnormality whatever. The disease was noticed for the first time in the second or third month after birth, the mother stating most positively that it was not congenital. The patient has no other affection of the skin, and has always been in excellent health.

In view of the rarity of the disease, it may be of interest in connection with this case to briefly review the leading features of the small number of cases thus far reported.

CASE I.[1]—The patient was a clerk, twenty-one years of age, born with two large nevi (port-wine stains) on the left thigh. At six months of age the veins of the left calf began to enlarge and became prominent. At the age of two years numerous warty growths appeared on the left buttock, the back of the left knee, and on the left half of the peri-anal region, coincidently with an attack of fever. At the ages of seven, eleven, fifteen, and nineteen years, similar attacks of fever occurred, with enlargement of the lesions and an increase in their vesicular appearance. At the time of the observation, irregular, raised patches were situated on the buttocks and in the left popliteal space, looking at a distance like warty growths, but on closer inspection resembling frog-spawn. The individual lesions looked like small pink warts with vesicular centers. The growth was not affected by pressure, and puncture gave exit to a clear watery fluid.

CASE II.[2]—A boy, ten years of age. The group of spots began with a wart-like spot upon the middle of the chin, one year previously; it spread slowly for a time, and then remained stationary. The patch, the size of a penny, was composed of clusters of small papules, many of which were translucent and contained fluid. The apices of these small lesions were dotted over with minute tufts of vessels. The disease showed great resistance to treatment, which consisted in cauterizations with nitric acid and the actual cautery. Where the disease was not wholly destroyed, it speedily recurred.

CASE III.[3]—A boy, seven years of age. There was a large patch upon the left shoulder which had existed three or four years. The disease was unattended by pain or inconvenience of any kind. The eruption consisted of clusters of isolated and confluent, pale, pin-head-sized elevations, many of them translucent, others blood-stained. The skin between the groups was pale, but otherwise normal. The vesicles contained clear lymph. In many of the lesions minute ecchymoses had occurred, and, in some, tufts of vessels were visible.

CASE IV.[3]—A youth; seventeen years of age. The eruption had existed several years, and was extending. The diseased skin had been the seat of several attacks of erysipelatous swelling.

CASE V.[4]—A girl, seven years of age. The disease was situated over the left trapezius, and consisted of groups of vesicles resembling warts. These vesicles contained clear albuminous fluid, and upon their apices and between them were tufts of capillaries. In close proximity to the large patch were several smaller ones of a similar character.

CASE VI.[5]—A young man, twenty-one years of age, suffered from slight scoliosis and lordosis, with atrophy of the left arm and leg. Groups of vesicles resembling herpes were situated upon brown, slightly thickened skin—in some instances upon normal skin—and occurred, in connection with painful multiple neuromata and cavernous angiomata, upon the left upper extremity, in the region of the brachial plexus. The vesicles were filled with clear serum.

CASE VII.[6]—The patient was a girl, ten years old. At the age of three years, the eruption made its appearance upon the left side of the neck, as a single spot resembling a blister. Within a short

[1] Tilbury and T. Colcott Fox: Trans. Path. Soc., London, vol. xxx, 1879.

[1] Jonathan Hutchinson: Trans. Path. Soc., London, vol. xxxi.
[2] J. Hutchinson: Trans. Path. Soc., vol. xxxi.
[3] Hutchinson: Clinical Illustrations.
[4] Malcolm Morris: Internat. Atlas of Rare Skin Diseases.
[5] Kobner: Verhandlung d. med. Gesellschaft, Berlin, 1883.
[6] Noyes: British Journ. of Dermatology, December, 1890.

time other lesions appeared, which gradually enlarged, until they became the size of a small pea. At the time of observation the disease consisted of a patch of vesicular-like nodules, closely aggregated. Over some of the vesicles small capillaries were to be seen.

CASE VIII.[1]—A boy, twelve years of age. The disease was first noticed upon the phalanx of the great toe, shortly after birth. At six years of age, other lesions developed upon the leg, and subsequently new ones appeared all the way up to the middle third of the thigh. They slowly underwent involution while new ones were evolved. The veins of the right leg and thigh, the seat of the lesions, were markedly varicose, as were also the circumflex, iliac, pudic, and epigastric veins. No glandular enlargement existed about Poupart's ligament, and there was no discoverable obstruction to the circulation within the pelvis. The cutaneous lesions were situated in the course of and over the varicose vessels. They occurred in groups for the most part, the individual lesions being discrete. These groups consisted of from fifteen to thirty separate, deep-seated, vesicular elevations the size of a pin-head, seated upon normal skin. The contents consisted of a clear, slightly yellow fluid. A few telangiectatic vessels were seen running around the patches.

In addition to the cases detailed, Crocker has reported two, and Walsham one; all three occurring in children, and presenting features similar to those already described.

It is worthy of remark, that in three of the cases the disease was associated with some abnormality of the vascular system. In all it first appeared in childhood, and in the majority in the early months of infancy. The number of cases, however, is yet much too small to permit any trustworthy conclusions to be drawn from these facts.

In the few instances in which microscopic examination of excised portions of the diseased tissue was made, it was found that the principal pathological changes had their seat chiefly in the papillary and sub-papillary layers of the corium. These alterations consisted in the formation of numerous flask-shaped or funnel-shaped cavities containing granular matter, and in some instances, red blood-corpuscles. Langster, who examined lesions from one of Hutchinson's cases, regarded the deeper cavities as dilated lymphatic channels, and the more superficial ones as the result of the distention and rupture of lymph-spaces in the papillary layer. More recently, Török, who examined portions of skin taken from the case reported by Noyes, has expressed the opinion that the process is not simply a dilatation of preëxisting lymph channels, but is a hyperplastic one, leading to the formation of new lymph-vessels.

The only treatment likely to be of service is cauterization by means of caustics or the actual cautery. This should be done in the most thorough manner, care being taken to destroy every portion of diseased tissue. Failure to accomplish this is quite certain to be followed by a speedy recurrence.

[1] Elliot: N. Y. Med. Record, May 16, 1891.

ORIGINAL LECTURE.

SIX CASES OF COAL-GAS POISONING, ONE OF THEM WITH AUTOPSY.

BY PROF. J. M. DA COSTA, M.D., LL.D., ETC.

Clinical Lecture delivered at the Pennsylvania Hospital, December 5, 1891.

[Special stenographic report for THE MEDICAL NEWS.]

GENTLEMEN: I shall this morning call your attention to a remarkable group of cases of coal-gas poisoning. There were admitted into the hospital on the first of December six Italians, whose history is briefly as follows: They were all sailors on the Italian barkentine "Selina," lately arrived at this port. On November 30th they had gone to sleep in the forecastle, next to the cook's galley, in which a fire was burning in a stove. It was subsequently learned that it was a stove that had just been purchased, and as the men were not familiar with the management of a coal-stove, they neglected to attach a pipe to it before lighting the fire. As the night was cold, the forecastle was tightly closed. In the morning, as none of the men were out, the captain and mate went into the forecastle and saw them apparently asleep; but they could not be aroused. The hospital ambulance was summoned, and Dr. Miller, the resident physician, accompanying it, upon arrival found four of the men absolutely unconscious, and two merely dazed, who staggered in walking. All six were promptly brought to the hospital.

From this point we will take up the history of these cases in two groups: first the two light cases, and afterward the four grave cases. The members of the first group were, as just stated, not unconscious—they walked, though with a staggering gait; their faces were flushed and wore a stupid expression. The temperature was 99 6° in one case, 100.2° in the other; therefore only slightly elevated. Their conjunctivæ were injected, but the pupils were normal. Respiration was accelerated: in one 24 and in the other 28 to the minute; and the pulse was likewise slightly increased in frequency. Both cases presented extreme irritability; they did not want to be disturbed, and insisted upon being let alone and allowed to sleep. The younger one was absolutely savage when he was aroused. They remained in this mental condition only a short time. The next day they were natural in temper, and the flush had disappeared or was present to only a slight extent; the temperature kept a little above the normal. The urine in both of these comparatively light cases was free from albumin and sugar, and was copiously passed. Indeed, it was healthy urine, except that it contained considerable urates.

As further symptoms in the case of the elder one of the two, G. F., aged thirty years, it should be noted that he complained of much pain in his limbs and in his back; also, though to a less degree, in his

arms. He had, indeed, diffused pains throughout his body, which were not present in the other patient, C. G., nineteen years of age. Both of them presented a hacking cough without expectoration, without change of voice, and without physical signs in the chest.

This was their early history; their subsequent course was as follows: On the 3d of the month (third day in the hospital) the temperature in both was down to normal. The pulse in the younger one showed a slowing, falling soon after admission to 60; this morning it is 68, with respiration 20, and temperature normal. In the second case there was no slowing of the pulse. This morning the pulse is 70, respirations 24, temperature 98.4°. In truth, these men are convalescent. They no longer present any flush; they feel well; they have lost their irritability, and the pains also have gone. A slight cough remains in the first case. The tongue, in Case II, is coated and the bowels are constipated, and, indeed, these have been features throughout the case.

We now come to the remaining group of four cases, which were of a more severe type; for we have broadly distinguished between those in which there is little disturbance and no loss of consciousness, and those in which the poisoning was more decided and with distinct loss of consciousness.

Here is Case III, the first of the series of bad cases. His name is V. V., forty years of age. On admission he presented the same general symptoms as the two preceding cases, except that he was very nearly unconscious, only opening his eyes in a dazed way when he was disturbed, and immediately relapsing into stupor. His face was flushed; the pupils were equal and moderately contracted; his lips were bluish; he had passed urine and feces involuntarily. When he was brought in, his temperature was 101.4°, pulse 110, respirations 24. He remained in the same condition throughout the day, except that he vomited once in the afternoon, about four o'clock, after which he brightened considerably, opening his eyes and seeming more rational. Later in the same afternoon he had two slight chills, and began to cough, bringing up muco-purulent expectoration. He perspired freely about his face and upper part of the body. The next morning, after a fairly good night, he seemed more comfortable, and he slept the greater part of the day. A few dry râles were found in his chest; his respirations were 30, pulse from 90 to 100.

During the day the bronchial symptoms became marked, and the temperature more elevated, ranging between 102° and 103° on the second and third days, declining on the fourth to 99.8°, and finding since its way down to normal; at no time has it been a subnormal temperature. He has perspired freely. The rapid breathing and the râles were never associated with signs of dulness; there was, however, slightly impaired resonance, with congestion of the lung, most marked at the right base. His pulse was weak, as was the first sound of the heart. The urine-record was very instructive. On admission, he was catheterized. The urine was acid, clear, of a specific gravity of 1022, and seemed normal, without albumin or sugar. The urine drawn the same evening was acid, clear, of a specific gravity of 1026, and contained a faint trace of albumin, but no casts were detected. On the second day after admission the urine was acid, very turbid, of a specific gravity of 1024, and showed a little more than a trace of albumin. That morning a few hyaline casts were discovered, with epithelium and abundant urates. Since then the albumin and the casts have disappeared. The urine was examined for sugar on two separate occasions, and none was found. The man has had a great deal of pain in the muscles of the back, arms, and legs. It still hurts him to be turned over in bed and in any way to move his body. His tongue is heavily coated, and his bowels are constipated. His pulse is 86, the respirations are 24, and the temperature is 99°. He coughs and has copious muco-purulent expectoration. He has dry râles at the lower part of the left lung, and rather feeble breathing, with a slightly impaired percussion-note at the lower part of the right lung; in other words, he has still a congested right lung and bronchitis upon the left side. As to the heart-sounds, I find the first sound still feeble; there are no murmurs. The splenic dulness extends just to the margin of the ribs. The bowels are only moved by injections.

Of Cases IV and V, I will give you a brief record. G. T., who is Case IV, is a boy of thirteen years. His face on admission was flushed rather more than in the other cases; he was absolutely unconscious. His pupils were equal, neither contracted nor dilated. He also was exceedingly irritable and restless. His arms were rigid and folded across his chest; there were muscular contractions in the arms. His lips were blue and he frothed at the mouth. His pulse was 132 and weak; the respirations were regular and 24 to the minute; his temperature was 99°. Toward evening on the day of admission he had somewhat roused, but was still restless, showed great irritability when disturbed, and had a frowning countenance. In the evening his temperature was 97.4°, and he was not fully conscious. During the night he refused all milk and medicines. He urinated involuntarily. He had several severe chills and slept poorly, crying out and moaning, and putting his hands frequently to his head, as if in pain; he perspired freely. His condition the next day was more wakeful, yet he was very irritable when disturbed, and had decided muscular pains and soreness. His urine record was as follows: Urine drawn on admission was turbid, 1022, acid, and fairly loaded with urates, but no albumin was found. In the evening, the specimen was turbid, 1022, acid, and did not contain albumin or sugar. The morning urine was turbid, 1026, acid, contained urates in abundance; there was a trace of albumin and some hyaline casts. The next day (on the 3d), his urine was normal and the casts had disappeared. After this he gradually improved; his temperature lowered, but there was again a slight rise yesterday; it went up to 102°, and has remained elevated since. He has some cough, with a few râles, and the same coated tongue and tendency to constipation of the bowels as the other cases. His blood contains 4,040,000 red corpuscles to the cubic millimeter; the white corpuscles are not increased; the hemoglobin is 87 per cent.

Case V is F. C., aged forty-five years. His temperature on admission was 97°, pulse 90, respirations 26. The temperature had gone up in the afternoon to 102°, with pulse 84 and respirations 22, and it remained elevated until the 4th inst., when it descended rather abruptly to the normal. It has since reached 103°. His

face was at first heavily flushed and with a frown on it. He has chest-symptoms: cough, muco-purulent expectoration, with dry and moist râles, but no impairment of resonance upon percussion. He, too, has a coated tongue and constipated bowels and muscular pains and tenderness—these, indeed, in an aggravated form. His pulse was feeble, slightly accelerated—about 80; the first sound of the heart was also weak.

He has an interesting urine-record. As he was unconscious upon admission, his urine was drawn by catheter. It was found to be clear, specific gravity 1024, acid, and free from albumin. The afternoon urine was turbid, 1026, and contained a slight amount of albumin, with hyaline casts, blood-corpuscles, and crystals of urates and of oxalates. The next morning it was again turbid, still albuminous, and contained blood-corpuscles, casts, and oxalates. The following morning the urine was clear again, of a specific gravity of 1022, with traces of albumin, and a few hyaline casts. On the 4th (yesterday) the urine was normal, containing neither albumin nor sugar.

Let us analyze these cases of coal-gas poisoning and view their common features. Five of the six recovered; of the remaining case I will presently show you the specimens. Before proceeding, let me state the treatment that was followed. It consisted in a plentiful supply of fresh air; in oxygen-inhalations to the bad cases; in digitalis, given hypodermatically, to sustain the action of the weak heart; and in stimulating expectorants, especially the syrup of senega, to which late in the case, in a few instances, ammonia was added. The diet consisted of milk. None were freely stimulated except the one that died, but they all had a slight amount of stimulant given, from time to time, when they seemed very weak. Due attention was paid to the condition of the bowels by the administration of salines.

Five of these cases, as I have already told you, are nearly well; it only remains to decide what is to be done for them now. Those that are comparatively free from bronchial irritation, but present coated tongues, we will put upon acid, and administer thrice daily fifteen drops of dilute muriatic acid in infusion of cinchona, two drams. To keep the bowels soluble, we will give a saline—a teaspoonful or more of Rochelle salts each morning in a glass of water. In the cases in which bronchial symptoms persist, we will prescribe muriate of ammonia, 10 grains, in each dose of syrup of senega, which shall be continued. We have no fear now of introducing ammonia into the blood, as we might have had at first. To all of these cases we are also giving from 10 to 12 grains of quinine daily.

This is a most instructive group of cases of poisoning by coal-gas or of carbon monoxide combined with carbon dioxide. These cases are not rare; they are found under circumstances such as these were where the coal-gas from a stove burning in a close room poisons the air. The same kind of cases occur when charcoal fumes are set free in an apartment, which is a favorite mode of committing suicide in France, by leaving a charcoal-stove burning without allowing any vent for the gas to escape from the room. Coal-gas poisoning also happens when, owing to a defective flue, the gas from a furnace passes into a sleeping-room, as occurred in two very severe instances in elderly people, one of which I saw with Dr. James Graham, of this city, a few years ago, and both of which he afterward reported to the College of Physicians.[1]

No matter how produced, the symptoms of these cases are alike. When the poisoning is slight, or the patient not very susceptible to the poison, for some come only slowly under its sway prior to the stage of unconsciousness, there will occur headache, irritability of temper, a disposition to be let alone, and vague muscular pains. On the other hand, when the impression is at once deeper, or there is a longer exposure, the patient lies before you in an unconscious condition. His face is flushed; sometimes, in place of actual congestion or blueness, there is a cherry-red appearance of the mucous membrane. The frown on the face is very significant, and we observed it in all the cases that were unconscious. The respirations are accelerated. An irritative cough is present, and this is more than mere local throat irritation, as several of these cases prove. You will soon find that signs of congestion of the lungs manifest themselves, with bronchial râles and the like. While speaking of the congestion, I told you that it affects both of the lungs; I will now add that the skin on the general surface of the body may also show spots of congestion. There were present in two of the cases (G. T. and V. V.) bluish spots, as if the blood had settled at the lower part of the chest and back, very much like what is often observed *post-mortem*.

The temperature of the cases is peculiar. Two showed depressed temperature (to 97°) for a time, but only early in the case. This leads us to believe that the statement made by some observers is correct, that the temperature in coal-gas poisoning is depressed. But it is not always so, nor, as we see here, does it stay depressed; it soon rises to 102° or 103°, and remains high, especially when there are chest-symptoms. The low temperature is the earliest temperature, and may be of but very short duration. The pulse is accelerated and feeble, and the character of the first sound of the heart corresponds to the character of the pulse.

Let us look at the urine-record. It indicates disturbed action and congestion of the kidneys. It shows albumin, mostly only in traces, though in the fatal case the urine was highly albuminous; in some of the graver instances blood with hyaline casts was present, and, as a very general rule, a heavy deposit of urates, especially of the urate of ammonium, and of oxalates. Sugar we did not find.

With reference to the intestinal symptoms, we were struck with the heavily-coated tongue and the constipation. But far more significant are the general soreness of the body, the muscular pain and tenderness, the desire to keep quiet, to prevent the acting muscles from being brought into play. Undue sensitiveness of the skin did not coexist: free perspiration was common.

I have now grouped all of the symptoms except those belonging to the nervous system. The condition is generally one of deep stupor. The pupils respond sluggishly to light, but are equal and normal. In one of the cases—the fatal case, presently to be described—there were several convulsions; a number showed a

[1] Transactions of the College of Physicians of Philadelphia. 3d ser., vol. viii.

tendency to contraction of muscles. Let me add that general irritability of temper and desire to be let alone existed to a marked degree.

You will ask, What becomes of these cases? When they get well, do they at once get thoroughly well? No! They do not. Indeed, long after the poisoning there may be striking anemia, and fresh nervous disorder may develop. I have already spoken of the case that I saw with Dr. Graham. After she recovered from all of the acute symptoms, on the forty-second day of her illness, aphasia and paralysis came on and remained for weeks.

Before proceeding, I may allude to the fact that the symptoms of coal-gas poisoning may exist in a mild degree from the chronic coal-gas poisoning that goes on in many an ill-ventilated office and room, and headache, depression of spirits, and a tendency to fall asleep are especially prominent symptoms. A very striking instance of the kind is reported by Dr. Woodbury, in the same volume of the *Transactions of the Philadelphia College of Physicians* as contains the report of Dr. Graham's cases.

With regard to the pathological changes caused by coal-gas poisoning, we may see them in the specimens from the fatal case already referred to. The man died with congestion and some edema of the lungs. The notes of the case are as follows:

CASE VI.—F. C., on admission, was absolutely unconscious. The pupils were equal, neither contracted nor dilated; the conjunctivæ were scarcely sensitive; the face was somewhat flushed, lips and ears rather blue; the feet were cold. Temperature 100.6°; pulse 134, very weak; respirations 40, marked by stertor. Muscular irritability was increased, the arms were folded across the chest, and the thumbs strongly flexed upon the palms of the hands; attempted movement of the arms met with powerful resistance. An examination of the chest detected numerous râles. The bowels moved involuntarily twice before admission, and the urine had to be drawn by a catheter. He was given digitalis tincture, 20 minims, with atropine, $\frac{1}{100}$ grain, hypodermatically, because he was unable to swallow. Whiskey was similarly administered, 30 minims every hour, and hot bags were applied to the extremities. He remained most of the day in stupor, with laborious, rather stertorous breathing. In the afternoon, he had slight convulsive movements, during which his breathing became worse; he looked as if he were dying. He was bled fifteen ounces, and oxygen-inhalations were begun, a gallon being administered every fifteen minutes. The breathing improved and remained so for a short time after each inhalation; the inhalations were continued until three hours before death.

The record, made at 6 P.M., was as follows: "Face flushed, ears and lips dark, cheeks puffed out with each expiration, breathing irregular, 46 per minute; râles on both sides of the chest. He is generally quiet, but moans at intervals. There is occasional muscular stiffening, especially in the arms; the hands are bent on the wrists, fingers and thumbs are strongly flexed upon the palms. Pulse weak, irregular, 120 to the minute; temperature 102°. The oxygen acted favorably, causing better pulse and quieter breathing. At 8 o'clock his breathing became much involved and stertorous; he was sweating excessively. He was ordered tincture of digitalis and atropine, as before, with the addition on two occasions of one-eighth grain of morphine. He was much oppressed, and had convulsive tremors.

At 11 P.M. he seemed better; his pulse was 112 and of good volume; temperature 101°; respirations still rapid; but he had opened his eyes and his breathing was more regular. His color was also better, and in general he seemed improved. The oxygen was decreased at this time to one gallon every half-hour. At 11.50 convulsive movements began in the left arm, and then extended to the right arm, finally becoming general; there were rigidity and stiffening of the whole body, accompanied by convulsive movements of the extremities. At 1.25 A.M. (December 2d) he had another and a much more severe attack, lasting fifteen minutes, in which his respirations ran up to 70 in the minute. At 2.30 A.M. he was sweating freely; at 3.25 and 4.25 A.M. he had a hypodermatic injection of morphine, atropine, and digitalis. At 3.30 the temperature was 104.6°, his pulse 160, respirations 40. He was sponged with cool water, after which his temperature dropped to 98.8°, and his respirations were so shallow that he was unable to inhale the oxygen. During the night he had whiskey hypodermatically every hour and digitalis and atropine. After 3 A.M. oxygen was again given, one gallon every fifteen minutes.

The quantity of urine passed in the first twenty-four hours was thirty-seven ounces. On admission it was clear, 1022, acid, and free from albumin. On the evening of the same day it was clear, 1022, and contained a trace of albumin and a few hyaline casts. The next morning it was turbid, 1030, acid, very albuminous (about 7 per cent. by bulk, estimated after boiling), and showed urates in abundance, also a number of hyaline casts and a few epithelial cells; no blood was seen, but many crystals of urates, especially urate of ammonia.

On the second of December he grew steadily worse. The temperature rose to 106° in spite of repeated sponging; it was generally between 104° and 105°, being temporarily reduced by the sponging. He remained in an unconscious condition all day, with muscular twitchings, and at 5 P.M. he had a slight convulsive attack. The hypodermatics of whiskey, digitalis, and atropine were kept up; he perspired a great deal, except directly after the hypodermatic injections of atropine. The breathing continued rather stertorous, occasionally assuming a Cheyne-Stokes character. The pulse remained frequent and weak. At 6 in the afternoon all treatment was stopped, as he was moribund, and he died about three hours afterward."

The post-mortem examination was not made by our pathologist, but by the coroner's physician, who permits us to show you these specimens. Here are the lungs, kidneys, spleen, liver, and heart, and this is the record:

"There was moderate rigor mortis. Hypostatic congestion was most marked on the under surface of the body. The back was reddish blue; this color was also seen on the legs. The examination of the viscera exhibited very little change beyond congestion; they were uniformly congested and bluish, or dark red. The bronchial mucous membrane showed marked redness, and was covered with muco-purulent secretion. There was some edema of the lungs, but, on the whole, not as

much as his breathing during life seemed to indicate. The right heart contained a small, ante-mortem clot; the left ventricle was firmly contracted and empty. The kidneys were much congested, as was also the spleen. The kidneys were examined microscopically, and found not to be in a state of fatty degeneration, a condition which has been stated to be present in poisoning from the carbonic oxides. The blood throughout the whole body was of a lighter color than normal. This was especially so in the lungs, the blood in which was of a brighter shade of red than that usually seen, though not positively scarlet. The blood was also markedly liquid, and the coagula were few and small."

I want to call your attention to the color of the lung-tissue. Of course, the lung is congested but it has not the deep color that the congested lung usually has. It is rather more of a cherry color, such as has frequently been noticed in the cases that have been reported. I regret that the blood was not microscopically examined, but the autopsy was not held at the hospital and we had no control over it. The blood is said to contain hemoglobin deprived of oxygen by the displacing power of carbon monoxide gas, which not only displaces the oxygen, but interferes with further oxygenation—the carbonic oxide having a strong affinity for the hemoglobin, so strong that it suspends the oxygen-absorbing function of the blood—so that it is not merely the case that the blood has been poisoned by absorption of the coal-gas, but this has also seized upon the oxygen in the blood corpuscles, and combined chemically with the hemoglobin, rendering it unfit to further perform its function. You see in this, why it is that the mere administration of oxygen and fresh air is not enough to insure recovery. It was to get rid of the damaged blood that the patient was bled, with the view of taking away some of the devitalized blood; indeed, of not only relieving congestion, but of giving him a better chance to make fresh blood. He was too deeply poisoned to recover. A further point suggests itself in this connection—whether transfusion of blood may be of use. It has been practised and, although apparently rational, it has not been successful. It has occurred to me that we might gain valuable time by practising saline intravenous injections in the severe cases of coal-gas poisoning. This, with previous venesection to remove the changed blood, and with forced feeding, might make new blood so rapidly as to save life. But I throw this out as a suggestion rather than as an expedient actually employed.

CLINICAL MEMORANDA.

TRACHEOTOMY FOR OBSTRUCTION OF THE PHARYNX, WITH REMOVAL OF MUCOUS POLYPS FROM THE NOSE.

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RESIDENT PHYSICIAN IN THE EPISCOPAL HOSPITAL, PHILADELPHIA.

[Service of DR. THOMAS R. NEILSON.]

ON the night of January 23, 1891, a request came to the hospital to send the ambulance for a boy who was stated to be choking to death from a tumor in the nose and throat. I subsequently learned that this growth had been present for about five years, and had been constantly increasing in size, but it had never before produced any serious discomfort. It had been partially removed two years before, but had soon reached its former size again. Now, within a few hours, it had become so much enlarged that the patient seemed in danger of suffocation.

Not wishing to call out the ambulance for what was probably only an alarm created by the nervous apprehension of relatives, I walked to the house, and found that the severity of the case had not been exaggerated.

The patient, Alexander W., a lad seventeen years of age, was sitting up in bed, supported by pillows, and grasping the bedclothes and mattress with both hands, so as to bring into action the accessory muscles of respiration. He was cyanotic, and, during inspiratory efforts, supra-sternal and infra-sternal depression was very marked. He held his mouth widely open, and upon looking into it there was apparent a prominence of the soft palate downward and forward, forming a vertical, slightly convex wall, not more than two inches behind the incisor teeth. The junction of the hard with the soft palate was marked by a well-defined crease, and between the tongue and the soft palate there seemed to be absolutely no space for the passage of air. Presenting at the left anterior nostril was a mucous polyp, about the size of a small cherry.

Death from asphyxia seeming so imminent, I decided to perform tracheotomy at once. In the condition in which the boy was, any attempt to remove the obstruction was obviously out of the question. With a scalpel from my pocket-case, I cut down on the trachea as rapidly as possible, and opened it just below the cricoid cartilage. What little bleeding took place ceased spontaneously as soon as the trachea was opened, and almost immediately all the alarming symptoms disappeared. As soon as the ambulance could be brought, a tracheal tube was inserted, and the patient was removed to the hospital.

From the time of the operation until the arrival of the ambulance he slept very profoundly, and he remained quiet and drowsy even on the way to the hospital. Upon his arrival there, however, he became very much excited, and, as if in delirium, tried to get out of bed, and showed other evidences of cerebral disturbance. These soon disappeared, however, and in two days his mind had returned almost to its normal condition.

Within a few hours after his admission to the hospital he became able to take liquid nourishment with considerable comfort, so rapidly did the obstruction shrink in size when the dyspnea and the consequent cyanosis and general congestion were relieved.

On January 26th, no unfavorable symptoms having appeared, Dr. Neilson proceeded to remove the obstruction. A considerable quantity of bloody, purulent matter had been discharging from the nose ever since the patient's admission to the hospital, and now the small mucous polyp at the anterior opening of the left nostril had almost completely disappeared. He was etherized by inhalation through the tracheal tube.

It was found impossible to introduce the slender, flexible wire loop of the Jarvis snare, unsupported, past the obstruction; so threads passed from the anterior nares through the posterior by means of a Bellocq's

canula were used as guides, and the wire loop was drawn by this means through the nose until it appeared in the pharynx, below the seat of obstruction. Introducing his fingers into the pharynx from the mouth, the operator now slipped the wire snare around a large growth the root of which was attached to the posterior part of the left middle turbinated bone, and, severing the attachment, removed through the mouth a mucous polyp, ovoid in shape, and about the size of a hen's egg. In the same manner a similar growth, probably even larger, with a corresponding attachment, was removed in fragments from the right nostril, and several smaller ones, the attachments of which were anterior to those of the larger polyps, were removed through the anterior nares.

By means of an insufflator, both nostrils were now coated with a fine layer of iodoform, and plugged anteriorly and posteriorly; both pluggings were secured in place, and their subsequent easy removal assured, by attaching to them strings passed through both nares with the Bellocq's canula.

On January 31st the tracheal tube was removed, and on February 9th the patient was allowed to get out of bed. He was discharged from the house, and referred to the out-patient department, with the tracheal wound closed and the skin healed over it, on March 16th.

It was noticed at the time of his admission that his hearing was very defective; at the time of his discharge, this defect had very markedly improved, although no treatment had been especially directed to the correction of this symptom.

Since his discharge from the house, the extremely hypertrophied left middle turbinated bone has been reduced to its proper size by repeated applications of a saturated solution of chromic acid, and now the chief indication seems to be for an operation to straighten the nasal septum, which is so deviated toward the right as to almost completely prevent a view of the interior of the right side of the nose. Air, however, passes very freely through both nares.

PECULIAR CASE OF PUERPERAL ECLAMPSIA.

By G. A. HEIDNER, M.D.,
OF FREDONIA, WIS.

THE following case seems of interest principally on account of the peculiar onset and character of the convulsions.

Mrs. R., a primipara, was without any history of kidney disease up to two weeks prior to her confinement, or anything unusual during gestation. During the two weeks previous to my first visit, edema, beginning at the feet, had rapidly progressed upward until it involved even the hands and face. The labia majora were enormously enlarged and painful, with serous oozing through the skin.

At my first visit, April 19, 1891, I found the patient as described, and perfectly rational. She assured me that it would be at least four weeks before the expiration of full term. I punctured the labia majora, giving exit to a surprising quantity of serous fluid, and this afforded great relief. I ordered hot fomentations to the edematous extremities, rest in bed, a milk diet, and teaspoonful doses, every four hours, of the following mixture: Tinctura digitalis, ℥ijss; hydrarg. chlorid. mit., grs. x; glycerini, ℥iij; aqua ad ℥ij. The urine was scanty, its specific gravity high, and it contained 25 per cent. of albumin per volume. The bowels were constipated.

At 10 P.M., twelve hours later, restlessness and headache set in, followed shortly by purging and vomiting, and a little later by amblyopia. At 6 A.M. purging and vomiting ceased, but total blindness developed in a few hours, and headache and restlessness became extreme. Twenty grains of antipyrin were given, but were almost immediately rejected by the stomach. About an hour later a hypodermatic of morphine with atropine was given.

The patient had her first convulsion at 9 A.M. The seizure was mild, and did not last more than half a minute. The peculiarity in the onset of this convulsion, as well as in the subsequent ones, was that all the usual prodromata—risus sardonicus, blepharospasm, etc.—were absent. From the usual restlessness she passed into a state of clonic spasm that soon changed to a tonic contraction of all the muscles, producing a rigidity of the entire body with almost complete absence of motion. Cessation of respiration was observed, and no heart-action could be detected. Chloroform seemed of little or no value in these attacks, because there were no symptoms indicating their approach.

Immediately after the first convulsion ended, I gave an enema of chloral and bromide of potassium, of each thirty grains, and telephoned for my colleague, Dr. A. F. Fuchs. The woman had another convulsion fifteen minutes later, from which she went into a comatose state, and did not regain consciousness for twenty-four hours. As she had not complained of labor-pains, I began to consider the advisability of inducing labor. Upon examination, I was surprised to find the os uteri dilated to the size of a silver dollar, and that the contractions were good. A third and a fourth attack occurred at 10.30 and 11 A.M., respectively. The enema of chloral and bromide of potassium was repeated after the third seizure, but could not be retained on account of the descending fetal head, and morphine was, therefore, again resorted to.

The os uteri being fully dilated, and labor progressing satisfactorily at 11 A.M., the patient was anesthetized and kept in this condition until delivery at 11.30. Twenty minutes later the placenta was normally expelled. The post-partum hemorrhage was very light, and the case looked quite promising until 12 M., when, without any warning, a far more serious convulsion set it, followed in a few minutes by another. To all appearances the case was rapidly tending toward a fatal termination. At this juncture the left median basilic vein (the cephalic could not be easily found) was opened, and about eight ounces of blood were withdrawn. Soon, another convulsion came on, much milder than the two just preceding. The pulse still being quite full and hard, six ounces of blood were taken from the right arm. The pulse then became soft. Only one very mild convulsion occurred subsequently to the last venesection. The sedative enema was repeated at 2 P.M., and, as indicated by the restlessness, was repeated at intervals of from one and one-half to three hours until midnight.

At 6 P.M., six ounces of urine were withdrawn by

means of a catheter; the urine contained 50 per cent. of albumin per volume. No microscopic examination was made. The skin was hot and dry, and the temperature 102° F. At this time two drops of croton oil were given by the mouth, and our patient was wrapped in a flannel blanket wrung out of water as hot as the hand could bear, and an oilcloth applied externally to that and closed tightly. The blanket was changed at intervals of from one to two hours. The patient perspired freely, and became much more quiet. The croton oil having produced no effect, a second dose was administered at 11 P.M. *per rectum*. Free catharsis began at midnight and continued for a few days. At 1.30 A.M. a hypodermatic of morphine and atropine was given. On the morning of April 20th the patient was easily aroused, and was quite rational. Vision was beginning to return, but she had no recollection of what had occurred during the preceding twenty-four hours, and would not take her babe. The urine was scanty, of high specific gravity, and contained 50 per cent. of albumin per volume. She was now put on the digitalis and calomel mixture as indicated. There was no lochia.

On April 21st the urine was slightly increased in quantity, and there was some diarrhea; the temperature was 100° F., and the pulse 115.

Diuresis and diarrhea were marked on the 22d. The specific gravity of the urine was 1025; there was 25 per cent. of albumin per volume. Lochia began in the evening with very marked pain over the hypogastrium, which subsided as soon as the flow began. The patient was now put on a tonic mixture, and she made a rapid and complete recovery.

It is to be observed that—

1. There were no premonitory symptoms to indicate the approaching seizures.

2. The convulsive seizures bore no relation to the uterine contractions.

3. Unless constantly inhaled, chloroform was useless in preventing the onset of the seizures, or in modifying their severity.

4. There was great advantage from venesection, the convulsions continuing after delivery, and the pulse being full and hard.

THE APPEARANCE OF NERVOUS SYMPTOMS IN THE EARLY STAGES OF DIPHTHERIA.

BY WILLIAM C. DABNEY, M.D.,
PROFESSOR OF THE PRACTICE OF MEDICINE AND OBSTETRICS, UNIVERSITY OF VIRGINIA.

IT is well known that neuritis, or symptoms pointing to neuritic trouble, occur *late* in the course of diphtheria, or as *sequelæ* of the disease. Two cases have recently come under my observation, however, in which very marked numbness and tingling of the limbs, especially of the arms, occurred at the *commencement* of an attack of diphtheria.

W. M. B., aged ten years, was taken with a sore-throat on October 12, 1891; the false membrane was at first confined to the tonsils and uvula, but the nose subsequently became involved. There was considerable swelling at the angles of the jaw.

On the second day of the attack the boy complained of tingling and numbness in the limbs, especially in the arms, but there was no apparent diminution of tactile sense or of the sense of pain, nor was there any motor paresis. The tingling and numbness, however, were sufficiently great to occasion much discomfort. He was given $\frac{1}{10}$ gr. of bichloride of mercury and 15 drops of muriated tincture of iron, in a teaspoonful of glycerin, every two hours, his throat and nose being thoroughly sprayed just before each dose of the bichloride mixture, with peroxide of hydrogen and water, one part to six. In addition to this, every two hours he took a tablespoonful of brandy in half a glass of milk. The case ran a favorable course, and ended in recovery. The numbness and tingling lasted three or four days, and disappeared gradually. Two weeks after apparent recovery, there was marked paresis of accommodation, but no other paralytic symptoms developed.

The second case occurred in the same family, and was almost precisely similar in character. B. B., aged eight years, was taken sick on November 13th, with severe headache, fever, and sore-throat. There was at this time a small spot of membrane on one tonsil only. With the exception of sore-throat, the only complaint made by this little girl was of numbness and tingling in her limbs; she said they were "all the time asleep." This numbness appeared on the *first* day of the attack, and lasted three or four days, passing off gradually. The false membrane extended to the uvula, and later to the nasal cavity, and there was considerable swelling of the neck. The same treatment was used as in the first case, and the attack ended in recovery. Up to the present time (December 12th) there have been no paralytic symptoms.

The occurrence of numbness and tingling at such an early period of the disease I have not seen before, nor can I find any cases of the kind recorded. It caused me much anxiety, which, as it turned out, was needless, as both cases pursued a mild course and ended in recovery; but my fear was that such marked nervous symptoms occurring thus early might indicate a degree of nervous disturbance that would lead to serious consequences.

ANOMALOUS CONGENITAL FUNCTION: ASSOCIATED SYNCHRONOUS MOVEMENTS OF UPPER EXTREMITIES.

BY S. D. SWOPE, M.D.,
OF MARION, KENTUCKY.

So far as I know, a case similar to the one I report is not chronicled in medical literature.

T. H., a farmer of good habits and healthy family, tall and muscular in form, well developed and healthy, consulted me on April 23, 1891, with a septic wound of the forearm made by a wagon singletree-hook. He explained that the wound had been doing well and, he thought, healing rapidly, until a few days previously when, with the wounded arm in a sling, he attempted to pick up some trash from the ground with the hand of the uninjured arm.

He then explained that all his life whenever he attempted to do anything with one hand or arm, synchronous and similar movements were made with the other hand or arm. This was something new to me and I naturally felt incredulous, but after considerable examination satisfied myself that his statement as to the

anomalous nerve-function was correct. Moreover, this peculiarity was transmitted to three of his eight children. Though the movement of his left hand and fingers gave him much pain, immersed as they were in a hot-water bath, any movement of the right hand or fingers produced synchronous movements in the left. If he raised his right hand to his head, the left would involuntarily move as if to leave the water-bath. If he scratched his head with the right hand, the fingers of the left would move as if in the act of scratching.

His little boy, nine years of age, was called, and on holding his right hand between my palms and directing him to scratch his head with the left, the confined hand endeavored to move, though held firmly. The father, in passing a dish at the table, always takes hold of the table with his right hand to prevent it following the left as the dish is passed. If he carries a basket on his right arm, the left is held in the same manner. When writing with his right hand, the left imitates its movements. In short, whatever his right hand does his left imitates, and *vice versa*.

To keep the left hand immovable, the right must be confined in a fixed dressing.

INTESTINAL ANTISEPSIS IN TYPHOID FEVER BY MEANS OF BISMUTH SUBIODIDE AND SALOL.

BY J. D. FARRAR, B.A., M.D.,
RESIDENT PHYSICIAN, COOPER HOSPITAL, CAMDEN, N. J.

[Service of DR. E. S. B. GODFREY.]

I WRITE in commendation of the plan in practice at this hospital, of giving bismuth subiodide and salol in typhoid fever for purposes of intestinal antisepsis. The test of the accomplishment of intestinal antisepsis is the deodorization of the stools. This method of treatment certainly seems to reduce tympanites, control diarrhea, and prevent hemorrhage—the latter complication being rare when the antisepsis is early secured and persistently maintained. This treatment will modify the severity if it does not limit the duration of the disease. Our rule is to begin the administration of the drugs mentioned, alternately, whenever diarrhea exists, and to continue the same throughout the disease, aiming to keep the stools thoroughly disinfected. Twenty-four cases (six during Dr. Godfrey's term of service) have been thus treated in the hospital, and the foregoing recommendation is the outcome of a study of the results thereby obtained.

A CASE OF CHLOROFORM-POISONING.

BY JULIAN A. HIELSCHER, A.M., M.D.,
OF MANKATO, MINN.

ON September 5, 1891, I was hastily summoned to one of our hotels to attend a travelling man who had tried to commit suicide by taking chloroform. Upon entering the room, a very strong odor of this drug was observed. On the bed I found a man, about twenty-four years of age, in a comatose condition. His face was pale, his respiration very slow and shallow, the pulse imperceptible at the wrists, a cold, clammy feeling of the body and lower limbs, and the conjunctivæ senseless. The pupils were *dilated*. There had been no vomiting, and, as he was unconscious, I could not use the stomach-pump or give an emetic. I then employed $\frac{1}{10}$ grain of apomorphine hypodermatically, which in a short time produced the desired effect. The vomit was almost a gallon of beer (the patient had been upon a spree), which was strongly impregnated with the drug. Being still unable to swallow, I gave him from time to time hypodermatic injections of brandy, and employed artificial respiration, at the same time surrounding him with hot bottles and blankets.

After several hours of this kind of treatment he improved slightly, but not to my satisfaction, and I then administered a quart of strong, hot, black coffee *per rectum*. This acted like a charm; the breathing became more natural, the pulse improved, and consciousness returned. In the meantime I had, by a catheter, withdrawn over a quart of urine, which also emitted the odor of chloroform.

The next day I had the patient removed to Tourtellott Hospital, and a week later I discharged him.

The points of interest are as follows: 1st, the amount of chloroform taken was two ounces; 2d, the time was seven hours after taking before medical aid reached him; 3d, dilated pupils, later on contracted, then natural; 4th, odor of chloroform in urine, breath, and vomit.

MEDICAL PROGRESS.

Excision of an Obliterated Aneurism.—SCHOPF (*Wiener klin. Wochenschr.*, No. 45, 1891, p. 840) has recorded the case of a man, forty-six years old, who presented trophic changes and other evidences of disturbed innervation, circulation, and function in the right arm, dependent upon an obliterated aneurism of the right subclavian artery as large as a man's fist, behind the clavicle and great pectoral muscle. On account of the gravity of the symptoms, in conjunction with a possible doubt in diagnosis, operative interference was determined upon. Artery, vein, and nerves were found adherent. The coats of the aneurism were thickened; the cavity was filled with dense coagula. The afferent division of the vessel was pulsatile and as large as the little finger, while the efferent division was obliterated and reduced to the thickness of a lead-pencil. The former was ligated with strong silk and the aneurism was carefully dissected out. The operation was followed by a disappearance of the distressing symptoms and a resumption of the functions of the right upper extremity.

The Etiology of Posterior Spinal Sclerosis.—ERB (*Berliner klin. Wochenschr.*, Nos. 29 and 30, 1891) has fortified the position that he has taken as to the importance of syphilis as an etiological element in the development of posterior sclerosis. He has carefully studied more than 550 cases that came under his own observation, in almost 90 per cent. of which he was able to elicit positive evidence of a history of syphilis. In the remaining 10 per cent. such a history could not be obtained. To verify the accuracy of his results, Erb made a series of counter-observations in 5500 cases of various kinds of disease, of which it was shown that but 23 per cent. were syphilitic, while 77 per cent. were not syphilitic.

Nearly half of the cases of tabes developed within ten years of the primary infection, while 88 per cent. developed within twenty years. Other causes of subordinate importance, alone, associated, or in conjunction with syphilis, were exposure to cold, excessive muscular activity, sexual excesses, traumatism, and a neuropathic predisposition.

Influenza and Psychoses.—In a paper read before the Medical Society of London, Savage (*Lancet*, No. 3558, p. 1043) quoted the conclusions arrived at by Dr. Leledy in regard to the relation between influenza and the psychoses. 1. Influenza, like other febrile affections, may establish a psychopathy. 2. Insanity may develop at various periods of the attack. 3. Influenza may induce any form of insanity. 4. No specific symptoms are manifested. 5. The rôle of influenza in the causation of insanity is a variable one. 6. Influenza may be a predisposing or exciting cause. 7. In all cases there is some acquired or inherited predisposition. 8. The insanity is the result of altered brain-nutrition, possibly toxic. 9. The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza. 10. The curability depends on general rather than on special conditions. 11. The insane are less disposed to influenza than are the sane. 12. In rare instances, influenza has cured psychoses. 13. The insane may have a mental remission during the influenza. 14. There is no special indication in treatment. 15. Influenza may lead to crimes and to medico-legal issues.

Extirpation of a Tuberculous Kidney.—Schuchardt (*Deutsche medicin. Wochenschr.*, Sept. 3, 1891), at the Congress of German Surgeons, reported a case of cystitis in the course of which pyonephrosis developed. Incision afforded but temporary relief. Tuberculosis was suspected, and confirmed by reaction to tuberculin. Other treatment failing, the kidney was removed. Following the operation the excretion of urine was diminished, uremic symptoms appeared, and on the fifth day the urine was suppressed. Death took place on the ninth day. At the autopsy the pelvis of the kidney was found occupied by calculi; the renal structure was almost entirely wanting. Histologically, no changes were found that could be ascribed to the action of tuberculin; the giant-cells were in places disintegrated by the invasion of leucocytes; but bacilli were still to be found. Necrosis of the epithelium of the remaining kidney was the probable cause of the development of uremia.

Chronic Alcoholism with Obstinate Hiccough.—Smart (*Edinburgh Medical Journal*, September, 1891) recently presented to the Edinburgh Medico-chirurgical Society a case of chronic alcoholism with hiccough of three weeks' standing and so obstinate as to prevent sleep and the ingestion of nourishment. Nutrient enemata and suppositories were administered. One-third of a grain of morphine sulphate was injected hypodermatically every three hours; and, to prevent toxic narcotism, chloroform was given by inhalation and by the mouth. At the end of forty-eight hours the patient had obtained seven hours' sleep. By the sixth day the singultus was controlled; by the ninth, feeding by the mouth was resumed, the patient thereafter progressing toward recovery.

The Vapor of Naphthalin in the Treatment of Whooping-cough.—As a result of a considerable successful experience, Chiavernac (*Bulletin Gén. de Thérap.*, 40. liv., 1891, p. 337) recommends fumigation by means of naphthalin in the treatment of whooping-cough. About half an ounce of the drug is, on one or more nights, made to burn in a suitable vessel in the sick-room, the windows and doors being tightly closed. The cough at once moderates, the dyspnea and other symptoms are favorably influenced, and the attack is soon brought to an end. Complications may contra-indicate the employment of the treatment. Thus, individuals suffering with pulmonary tuberculosis cannot bear the treatment.

Congenital Tuberculosis.—At a meeting of the Société de Biologie, Sabouraud (*La Médecine Moderne*, No. 43, 1891, p. 745) presented the specimens of an infant, eleven days old, in which symptoms of broncho-pneumonia had developed on the tenth day. Spleen and liver contained many tubercles with granular degeneration at the center, and containing bacilli at the periphery. The mother had died since giving birth to the child, and presented the lesions of pulmonary tuberculosis, with no involvement of the genitalia or of the breasts. The deduction is that the tuberculosis of the infant was congenital, the infection occurring by the umbilical vein.

The Etiology of Erysipelas.—Jordan (*Archiv für klin. Chirurgie*, Bd. 42) has recorded a case of facial erysipelas, in which there was also a subcutaneous abscess in the frontal region, periosteal suppuration of the right fibula, a disseminated pneumonia of both lungs, periostitis of the pubic bone and of a cervical vertebra, and in which only staphylococci pyogenes aurei were found. A nurse in attendance upon the patient subsequently developed erysipelas; in her case too only staphylococci pyogenes aurei were found.—*Münchener medicin. Wochenschr.*, No. 43, 1891, p. 767.

Albumosuria.—At a meeting ot the Clinical Society of London, Dickinson and Fyffe (*British Medical Journal*, No. 1614, p. 1206) presented a paper containing a report of twenty cases in which the urine contained albumose. It was suggested that what had previously been considered peptone, as found in the urine, was, in reality, in many cases albumose. From the results of experiments upon animals, it seems possible that the diarrhea, from which many of the patients suffered, may have been dependent upon the presence of albumose in the blood. Albumosuria was present in a number of cases of pneumonia of ordinary severity, but it was wanting in some virulent and fatal cases. The origin of albumose is ascribed to the existence of suppuration; its formation is probably dependent upon the activity of pyogenic microörganisms. Albumosuria has been observed in acute rheumatism, especially during the stage of absorption; it was frequently found in pneumonia. It is thought that albumosuria has no connection with disease of the kidney.

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A NOBLE PROGRAM.

WITH justifiable pride the *British Medical Journal* points to the work in the interest of the medical profession that it has carried out in the past, and looks bravely forward to its coming duties. It aims at a close union for practical work of all the physicians of Great Britain and Ireland, that they may be "bonded together in fraternal coöperation through the British Medical Association, and in direct intercommunication through its *Journal* for the purposes of professional friendship and active influence on the public mind; for social progress, mutual enlightenment, and the attainment of a higher position and of greater influence in the State and in social life, not only for each individual, but for the whole body. By communication and cooperation the medical profession can achieve much more in the future than it has in the past."

That this is not sentimentalism is seen by the plan of campaign laid out for this year. Chief of all is the redressal of the "cruel wrongs and grievous hardships of the Irish dispensary doctors," now "under a singularly inequitable and oppressive system." Next comes the restriction of the patent-medicine disgrace, that is fast becoming a genuine curse of civilization. The reform of the lunacy law is also to be undertaken, and various other needed reforms are to be zealously entered upon.

From the *Journal's* sturdy business-like resolve, with conviction and confidence of success speaking in every line, we turn to our own country to ask if the medical profession here is undertaking the reformation of any such abuses. The reluctant answer must be that there are not the least indications even of the felt need of such work. Individualism, democracy with a vengeance, is the ruling passion. There is little or no united action, no attempt to do away with the wretched abuses everywhere flagrant. There is no common purpose or action toward elevating medical education, toward stopping the execrable shame of the diploma-mills. There is not the faintest hint of a common desire to fight down the national infamy of the patent-medicine business. The ruin wrought by the reckless abuse of hospital and dispensary charity is nowhere more iniquitous than with us. Quackery of a thousand types is nowhere else so rampant and impudent. Insidious or open advertising on the part of physicians has never before or otherwhere been made an art and practice so financially successful and so little rebuked. Europe has laughed into merited obloquy, silence, or non-existence the farce of homeopathy, while here we grant it subsidies from State treasuries, and Fashion dances to feed it with funds. The death-rate of naturally insanitary London, with her five millions of population stewed in vice and squalor, is by sanitation and practical preventive medicine kept far below that of our small cities, with every natural and social advantage favoring them.

But such things must continue until the entire profession of America bands itself together with a common feeling of self-respect and of duty devolving upon it—a duty at once to itself, but also and preëminently to humanity. When such time comes, instead of a multitude of tiny journals devoted to the vanities of editors and writers and to the interests of advertisers, it will then find a few fitting mouthpieces like the two great English medical journals, through which it can speak with power and authority.

AMERICAN PORK IN GERMANY.

THE embargo upon the American hog in Germany was not removed without great difficulty, and the echoes of the struggle are still heard in the public and scientific journals of that country. An interesting and important contribution to the ques-

tion has recently been made by PROF. CARL FRÄNKEL (*Deutsche medicinische Wochenschrift*, No. 51), in which the proposition is maintained that the trichinæ are no longer active, but are practically destroyed in the process of curing the pork as followed in America. It is acknowledged that the percentage of the trichinæ is enormously greater here than in Germany. In the statistics of the Hamburg inspection, given for the six years ending 1883, inclusive, the total figures are as follows: American pork, 235,819 pieces, of which 3470 were infected; German pork, 304,625 pieces, of which 8 were infected. The percentage given by the German inspectors is rather less than that obtained by several observers in this country.

In support of the view that the trichinæ are killed by pickling, FRÄNKEL calls attention to the fact that the countries—such as England, France, Holland, and Belgium—that take a very large amount of American pork annually are almost free from trichiniasis; and he also states that it is doubtful if any well-authenticated instance of infection in Germany can be traced to American pork. In the epidemic at Bremen—if in the Düsseldorf cases—it is not possible to exclude the native pork as a source of infection. In proof of the fact that the processes of curing pursued in this country are, as a rule, fatal to the trichinæ, FRÄNKEL quotes a large number of negative feeding-experiments made by reliable men in Germany and in Holland, and concludes from them that in reality the American is very much less dangerous than the native pork. On the other hand, PROFESSOR FRÄNKEL does not refer to the Havre experiments that appear to show that the ordinary processes of curing have very little influence in killing the trichina, as animals were readily infected when fed with salted or smoked ham and bacon containing the parasites. In fact, the following experiment, given in CHATIN'S work, would indicate that the trichinæ possess a remarkable degree of resistance to salting: On the 19th of April, 1881, a piece was taken from an infested side of bacon, placed in a bottle, covered completely with salt, and the cork sealed. The bottle was opened on the 1st of April, 1882, and the piece removed. After soaking in water for several hours, portions of it were fed to a mouse on the 4th, 5th, and 6th of April. The animal died on the 7th, and perfectly developed sexual trichinæ were found in the intestines. A second mouse fed in the same way died on the thirteenth day.

After all, the important protective measure is thorough boiling or roasting of the flesh, and to this practice is due the immunity enjoyed to so large an extent in this country, in England, and in France, as well as in South Germany. FRÄNKEL urges that the tedious and elaborate inspection that prevails in Germany has scarcely had results commensurate with its enormous cost. That it must be very imperfect is strikingly shown by the fact that the cases of trichiniasis, numbering yearly in North Germany at least 100, are all caused by eating the flesh of animals that have undergone inspection. It is also disadvantageous in giving to the people a dangerous confidence in the soundness of the meat, and encouraging them in the habit of eating it raw or only partially cooked. In the districts of Münster 250 inspectors in six years examined 118,000 swine with the result of finding only one trichinous animal. The conclusion of the whole matter, so far as Germany is concerned, is that the people should give up the practice of eating uncooked meat, whether native or American.

Coming from such a recognized authority, PROF. FRÄNKEL'S article will no doubt be widely read, and is one of the most favorable that has appeared in defence of that much-abused and long-suffering animal, the American hog.

AMEBIC DYSENTERY.

WITHIN the past eighteen months, since the detection by OSLER of the ameba coli in this country, the question of its relation to dysentery has been carefully studied and its presence determined by MUSSER, STENGEL, and others, in Philadelphia, and by DOCK in Galveston. An elaborate monograph on the subject recently issued from the Johns Hopkins Hospital by COUNCILMAN and LAFLEUR (*Johns Hopkins Hospital Reports*, vol. ii, fasc. 6–9), is the most valuable contribution to the clinical history and morbid anatomy of dysentery that has been made since the publication of WOODWARD'S exhaustive treatise in the medical reports of the War of the Rebellion.

The study is based upon fifteen cases. The general clinical review by LAFLEUR, PROF. OSLER'S assistant, is a clear and convincing statement in support of the view that amebic dysentery is a form of dysentery separate from ordinary catarrhal dysentery, and also from the diphtheritic varieties. Among the special features are the more chronic

course, the numerous intermissions and exacerbations, and the tendency to serious complications, particularly abscess of the liver. The stools in a case of moderate severity are stated to be liquid, brownish-yellow in color, containing mucus and streaks of blood, sometimes sloughs. There is less viscid, clear mucus than in ordinary catarrhal dysentery, and, as a rule, much less blood. As a case becomes more chronic the stools no longer have a dysenteric character, but are of the consistence and appearance of thin gruel. The reaction of the stools is generally alkaline. Frequently, attacks of constipation alternate with diarrhea. The amebæ are found in all varieties of the stools, and at all periods of the disease, being most abundant in the exacerbations; they may be present even after the evacuations have become normal. The amebæ can be readily seen, and move actively at the ordinary temperatures, though the motion is accelerated on a warm stage. The authors hold that the characters of the stools of catarrhal dysentery and of diphtheritic dysentery are different; the amebæ were not found in the twelve cases of catarrhal and three of diphtheritic forms that were under observation at the hospital. Tenesmus was absent in many of the cases, and the fever, as a rule, was slight, and in many instances transient. The complications of the series were most important, as may be judged by the fact that abscess of the liver occurred in three cases, abscess of the liver and of the lung in four cases, peritonitis with perforation once, without perforation once, and intestinal hemorrhage twice. Of these complications the abscess of the liver is most important, and was usually characterized clinically by pain, irregular fever, with sweats. In the hepato-pulmonary abscess, of which four cases are given, the sputa are almost pathognomonic, as originally noted years ago by BUDD, who states that "there is no matter like it expectorated in any disease of the lung itself." It is described as often bright-red at first, subsequently of a dull brick-red, brownish-red, or rusty-brown color. Amebæ are present in it, occurring in considerable numbers. They are constantly found in the liver-abscess associated with this form of dysentery, as first pointed out by KARTULIS. The description of the anatomical lesions is elaborate, and is illustrated by seven double plates, giving the histologic details of the changes in the intestines and in the liver. The conclusion is reached that the ulcers in the colon in this form differ from those in other varieties of dysentery. The ulceration is caused by infiltration of the submucous tissue and necrosis of the overlying mucous membranes, and there is, as a rule, an entire absence of the products of purulent inflammation. The amebæ exist in numbers throughout the coats of the intestines, and in two cases were found in the peritoneum. In one case there were found throughout the liver numerous miliary abscesses, all of which, even the smallest, contained amebæ in numbers.

The life-history of the parasite remains to be worked out. KARTULIS has been able to cultivate the organism, but it is an extremely difficult matter to get pure cultures of the protozoa. It is most natural to suppose that the amebæ reach the intestines with drinking-water, probably in an encysted stage, in which they can resist the action of the gastric juice.

The disease is very chronic, and characterized by a special tendency to relapse. The treatment suggested is large rectal injections of bichloride of mercury (1 : 5000 and 1 : 3000), and injections of a solution of quinine of varying strength (1 : 4000 to 1 : 1000). Although the series of cases studied by these authors was unusually severe and the mortality high, in several instances the disease ran a mild course, and was rapidly relieved by the injections.

SELECTION.

SO-CALLED "HYDRARGYRUM LACTATUM."

A CASUALTY from the misuse of drugs is reported from Bay City, Michigan. Somebody blundered, and somebody else lost his life; so says the *Western Druggist*. A physician of that town fell into the habit of prescribing "hydrargyrum lactatum," meaning thereby a preparation furnished by a Chicago dealer in drugs, which is said to contain one part each of calomel and of bismuth subnitrate, and eight parts of milk sugar. This did no harm so long as the prescriptions were taken to the shops where the Chicago specialty was known. But the day came when a change in pharmacists was made by the patient. The new pharmacist ordered through his wholesale dealer a bottle of "hydrargyrum lactatum," and received a supply of Merck's "lactate of mercury." Merck's catalogue contains that item, with the price marked at $1.00 an ounce. Chemistry recognizes "hydrargyri lactas," or mercurous lactate, and, although it is not often heard of in medicine, Watts's *Dictionary of Chemistry* describes its composition and properties. This preparation was dispensed three times before any injurious effects were noticed, but the fourth dispensing of it was followed by the death of the patient. An analysis of the drug is said to have shown the presence

of mercuric lactate as well as of the mercurous salt, and it is suggested that a reduction had been going on in the bottle after it left the wholesaler's hands. If this is the fact, and can be proved, it will tend to lighten the condemnation launched by the *Western Druggist* against the conductors of the Chicago drug-house for its "criminally reckless terminology," in that they adopted a harmful name to cover a comparatively mild "specialty." It will also tend to lighten the feeling of responsibility for this particular "accident" in the mind of the physician, against whom the *Druggist* alleges that his conduct was "little less than criminal," because he prescribed a substance about which he really knew nothing. There seems to be a fatality about nearly all these "specialties, or combinations made by some known-to-us-alone process;" sooner or later, they become the occasion of loss of life, or they get everybody into trouble who has anything to do with them. The remedy of known composition is not always safe, but it comports more thoroughly with the dignity of the profession to employ it, so that even if perchance a casualty should follow its legitimate use, it will not be necessary to resort to that most idiotic of excuses, "I did not know it was loaded"—the plea of those who point pistols at their best friends and kill them!—*New York Medical Journal.*

CORRESPONDENCE.

PSYCHOLOGIC ASPECT OF THE "KEELEY CURE."

To the Editor of The Medical News,

Sir: There are some facts connected with this so-called "cure" that are worthy of the consideration of the medical profession. There are other phases that need but little investigation to warrant utter condemnation. Only a brief consideration of the medicinal agents used is necessary; it does not matter much just what agents are used. The sciences involved in the education of the liberal physician have something of a materialistic tendency, and we, as a profession, are prone to consider as of prime importance tangible material and obvious agencies of forces.

But we must not overrate the potency of material agents, neither must we ignore forces and agencies that we are cognizant of only by the light of reason and logic. It is not necessary to go over the ground of the pathologic anatomy of alcoholism. The physician knows the structural changes in the various organs and tissues of the body brought about by the habitual use of alcohol. He also knows that structural alterations in the brain, spinal cord, liver, kidney, and heart, are not overcome by any medicinal, mental, or moral methods of treatment.

As to the therapeutic application of the salts of gold, there is no new field of applicability. This auriferous element has without doubt more potency in the hand than it has in the stomach or in the circulation. The gold salts are acknowledged to be inferior to the iron salts in therapeutics. From a study of the physiologic action of the terchloride of gold, Hoffman, twenty years ago, conceived the idea that it would be of use in alcoholism, but careful and honest experiment and clinical use failed to give any evidence of a utility greater than that possessed by the iron salts. From time to time the medical profession has had its exacerbations of "auric fever," but it has always been a self-limited disorder.

Who knows that in the so-called "gold cure" gold is used at all? A patient is injected with a solution, but who knows its analysis? The patient receives hypodermatic treatment and ceases to have an appetite for spirits. Why? Is it because the solution of some salt of gold circulating in the system has restored normal function to a cirrhotic liver, or rendered an inflamed stomach more anemic, or caused a cardiac hypertrophy to disappear? Is it because a human being, weakened physically, mentally, and morally by alcoholic excess, is suddenly converted by having a drug administered to him? Nothing like this. Nothing new, or occult. There has been no newly-discovered potency whereby we can so easily set at naught Nature's decrees. The pathologic changes brought about by excesses are not to be remedied in a day or a month by any agent at our command, or that we shall ever command. There are effects, however, produced by drugs on systems thus depraved. It is a well-established therapeutic fact that certain drugs for a time lessen the craving for alcohol.

Hypodermatic administration of certain cerebral and cardiac stimulants, such as strychnine, atropine, cocaine, and digitalin, will stimulate the cardiac and nervous system to a degree sufficient to render alcohol superfluous and even objectionable to the patient. What, then, are the important factors that Keeley uses? For we do not question but he has effected cures of dipsomania. Whether the patients lapse again, it does not matter, unless the lapse be immediate. If a person affected with dipsomania has his appetite allayed for a year, it is fair to say that he is cured so far as the craving is concerned.

We all know the mental condition of the inebriate. All physicians have seen the poor unfortunate one on the verge of delirium. They have seen how the intellectual faculties and perceptions are blighted. They have seen manhood shorn of its glory. They have seen that apathetic dependence on the decrees of fate, that intellectual inertia, consequent upon frequently repeated stimulation, and it is a psychologic fact that a mind thus weakened is more susceptible of receiving and accepting suggestion than one in possession of natural moral and mental vigor. The susceptibility of the human mind under certain conditions of accepting suggestion is known to every observer of life. We know that changes in belief may be brought about, and even sensations due both to functional and organic disease may be so far ignored or forgotten as to *cease to be sensations.*

We will not go into the details of hypnotism, or hypnotic suggestion, except in so far as it has to do with the subject in hand. The phenomena of hypnotism were never so clearly understood by the scientific world as they are to-day. It is the province of psychology to reveal the laws governing these phenomena, and it has been the function of this branch of science to lift the veil of obscurity, remove the charlatanism, and dispel the dogmas that have clung to this department of mental science for many years. With the fair-minded there no

longer remain the delusions with which the mesmerists of one hundred years ago surrounded the phenomena of hypnotism. We now disclaim magnetism as a factor in the production of the hypnotic state, and deny that only a certain few persons who claim to be endowed with extraordinary will-power are capable of inducing hypnosis. We no longer use the magic wand or the "luminous shadow" of Lord Lytton to induce somnambulism or catalepsy.

The authority alone of reputable specialists is sufficient endorsement for the facts of suggestion, and there are scores of men that have seen epileptic seizures prevented, the hallucinations of melancholia relieved, and paralyses of months' duration immediately overcome by simple verbal suggestion.

But there is nothing in this beyond the comprehension of common mortals, if they will honestly consider all of the circumstances. If by a simple word of command a cerebral tumor that gave rise to epileptiform seizures had disappeared, or had trophic changes in an atrophied muscle been thus brought about, then we could justly consider such powers with awe; for we might then consider them supernatural. But the modern physician is denied any such supernatural power. The therapeutic application of hypnotic suggestion depends for its exercise upon an exact knowledge of definite but not occult physiologic and psychologic functions that any person of fair intellectual attainment can possess.

As suggestion is the factor in the production of the hypnotic state, so it is capable of producing a state of *susceptibility* entirely apart from lethargy, somnambulism, or catalepsy. This fact was pointed out by the school of Nancy, many years ago. The therapeutic application of suggestion has, as a basis, the fact that many diseases of a functional nature can be cured or relieved by making the patient believe that a cure will be effected if the advice given is followed. In other words, we induce a state of credulity. And this fact is the explanation of another, one that is as old as disease, and as well known to every physician as the phenomena of respiration, viz., that the specific treatment of certain diseases is moral, and that, whatever else it may be, any form of medicine is a placebo. But it is necessary that this state of credulity be induced, and there are cases in which it is impossible for the physician to implant this faith without first using some material means of producing an impression on the system, though the effect may have no direct bearing on the disease to be cured. These are the facts taken into account in the recent methods used in the cure of dipsomania.

In his rational and sober moments, the poor unfortunate sees his downfall, he sees the "handwriting on the wall," and he is willing and anxious to be restored to manhood, to family, and to society. He will avail himself of any opportunity for such restoration.

He goes to this wonderful healer and receives his injections and *mirabile dictu!* his thirst is lessened. The stimulants have done the initiatory work. The heart that has contracted feebly without alcoholic stimulation now pulsates more strongly under the effect of higher potencies. His tremor is lessened, and this he sees and takes courage; he feels that he is to be cured, for others have been cured in the same way. His mind throws off its lethargy, and he is all hope and determination. After a few such stimulating injections, together with the assurance of friends and of the physician, he believes, beyond any possibility of doubt, that he is to be free from desire for alcohol. He is convinced that alcohol is a poison and has no use in the animal economy.

That cures of dipsomania have been effected by Keeley, we do not deny.

That the hypodermatic injections are a factor in the cure we do not deny. But we assert that the chief factor is *suggestion*.

Very sincerely,

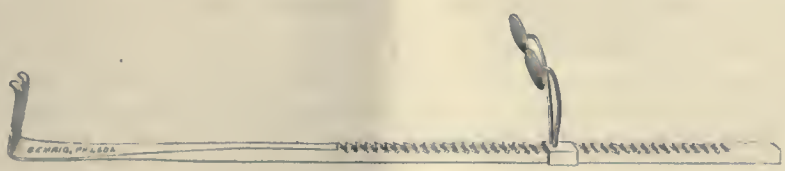
G. M. RANDALL, M.D.

AUGUSTA, MAINE.

SELF-RETAINING PALATE-RETRACTORS.

To the Editor of THE MEDICAL NEWS,

SIR: In an article by Dr. T. H. Weagly, of Marion, Pa., on "Self-retaining Palate-Retractors" (THE MEDICAL NEWS, September 5, 1891), which escaped my attention at the time, I see the following: "For thorough examination of the posterior nasal cavity and for various operations therein, such as the removal of adenoid tissue, galvano-cauterizations, and many of hypertrophied turbinates, the need of an effective self-retaining palate-retractor has long been recognized, both by surgeon and specialist. To meet this want the White Retractor, shown in Fig. 2, was brought out," etc.



As a matter of fact, the first description of any instrument of the kind ever published was one devised by myself and published in the *N. Y. Medical Record*, January 14, 1888, with cut, and in the *Transactions of the South Carolina Medical Association* for April, 1888, and in a *Handbook of Diseases of the Nose and Throat*, by Carl Seiler, M.D., third edition, p. 63. Full credit for priority of publication was also given by Dr. Joseph White, of Richmond, Va., in the first description of his instrument. The accompanying cut will illustrate the difference between the two instruments, that represented in the figure being only a slight modification of the first instrument described.

As shown, the hook being a solid band instead of a wire loop, the tissues cannot bulge through and obstruct the view; and the tip being bifurcated and curved backward, the septum is neither scraped nor injured, but serves to steady the instrument. The catch on the slide is entirely automatic in its action, without screw or clamp. The arms are provided with metal or hard-rubber pads, and rest on the alveolar processes outside of the nose. They are securely retained there

by the pressure of the retracted palate, and never slip unless improperly adjusted. In addition, as they do not enter the nose, they can always be applied to any face without regard to configuration, etc.

A rather recent experience has served to impress upon me the great utility of these retractors. It was in the case of a patient to whose pharynx I made a galvano-caustic application, relying for guidance through the nose upon the irregular outlines of the inferior meatus. The result was a severe attack of otitis media acuta with diminished hearing and consequent great mental distress for a period of several weeks. The incident will effectually prevent me from ever making any application of a similar nature without the aid of a retractor and consequent absolute accuracy by ocular demonstration.

W. PEYRE PORCHER, M.D.

CHARLESTON, S. C.

ELECTRICITY IN "LA GRIPPE."

To the Editor of THE MEDICAL NEWS,

SIR: It is probable that every practitioner of repute in this city (and also in all other large cities) has his own method of managing influenza, and the variety of remedies employed, as seen by the files of the druggists, would lead an acute observer to think that the *specificity*, as a friend called the disorder, is more apparent than real, and that possibly a less varied and elaborate therapy would do as well in the cure of the unfortunates as that now suggested by writers, which includes almost all of the new remedies, and a big lot of the older ones.

My own list of drugs has been very small, and most of my cases get well as soon under little medication as those who have been thoroughly soaked with stimulants, antipyretics, sedatives, and deobstruents. Partly because I am using electricity in some form of disease liberally every day, and partly because it is so well adapted to relieve pain, at least temporarily, I have tried what could be done with the different currents in this troublesome affection, and it gave good results in the few instances in which it was employed. The first instance was that of a woman who had great soreness and pain in every region, but particularly in the legs and back, and with her I used galvanism, both generally and centrally, running the current up to twenty-five milliampères. The first sitting gave her decided relief, and with the exception of the cough, which lasted for three days after the other symptoms disappeared, she was practically well in twenty-four hours after beginning the electricity. The next patient was troubled with the pain more particularly about the occiput, and had considerable sickness of the stomach and high temperature with it. A galvanic current applied to the nape of the neck (positive) and (negative) to the epigastrium, under an ascending current of thirty milliampères, relieved the nausea at the first application, and dissipated the weariness and pain at the second, while the cough also was notably improved—ceasing in four days without any expectorant or other drug whatever. This person was unable to rise from bed when I saw her first, and was apparently very seriously ill, yet she lost all of the prominent symptoms in the short time indicated.

The next case was that of a child who suffered distressingly from the throat and chest symptoms—her influenza being as pronounced as in any of the instances in which my patients have been sick for a fortnight or more. I gave her a little fever-mixture, and applied galvanism to the pneumogastric—positive to the neck, negative to the solar plexus. The electricity was not given until my second visit, at which time she had not been relieved at all by the medicine taken; the first application shortened the paroxysms of sneezing and coughing fully one-half, and the next in the evening still further improved her condition, not alone as to the thoracic symptoms, but in all respects. Half a dozen applications settled the matter, and converted what was apparently a very threatening case into one not at all alarming, and in a week she was out and at school. The three were typical instances of grippe, and no one could tell from the outset, as far as symptoms were concerned, how bad the trouble might be in the future, yet each did well under electricity alone, for all the medicine, aside from the galvanism, was inconsequential. Might I ask my friends who are equipped with suitable apparatus to try galvanism? I am now looking into what faradism and static applications will do in this matter.

WILLIAM R. D. BLACKWOOD, M.D.

246 NORTH TWENTIETH STREET.

"DISPENSARY ABUSES."

To the Editor of THE MEDICAL NEWS,

SIR: I am moved by the refreshingly vigorous editorials on "Dispensary Abuses," which have appeared recently in THE MEDICAL NEWS, to say a few words on this subject.

In the issue of January 2, 1892, you call attention to the tremendous falling off in the subscriptions on the last "Hospital Sunday" in London, and characterize this as an indication that public benefactors and philanthropists have had their eyes opened to the misuse that is constantly being made of their contributions. As an illustration of the extent to which this is done, and of the effrontery practised in the misapplication of funds donated for charitable objects, I would call attention to one of the annual reports issued by the oldest dispensary in the city of New York. We are told by the Board of Trustees that this dispensary had treated during the year 38,699 new patients, and a total of 102,818 cases; and in the same report the house-physician says: "All patients applying for treatment have received it *without question as to their ability to pay* [italics mine] for the services of an outside physician, and thus many have doubtless abused the charitable object of our institution." This statement has the merit of candor, if nothing else, but it becomes the height of impudence when it is associated in the same report with an appeal to the charitable for contributions, in which it is stated that the dispensary "assists the taxpayers in diminishing pauperism, and consequently crime," and helps "the poor to be self-supporting." It seems almost incomprehensible that shrewd and successful business men should put their hands into their pockets year after year to support such "charities," and allow statements like those quoted to pass unchallenged. Of course, the managers of these institutions seldom make the mistake of allowing their

house-physicians to print such reckless statements, and, consequently, those who are called upon to contribute are not often made acquainted with the true state of affairs. Again, is it not remarkable that, although the report to which I have referred was published and circulated two or three years ago, there has been no serious effort on the part of the trustees of this dispensary to remedy the evil? Surely this is an abuse of the funds entrusted to their care, and, as the gentlemen constituting the board of trustees are well-known and honored business men, we can only explain their failure to act because of the well-known and almost proverbial apathy of boards of managers.

Your closing remarks in the editorial referred to carry a stinging rebuke to many a young physician in this city; but do not blame them too much for their often unwilling part in encouraging "a cowardly sort of socialism," and for degrading their profession, until you have succeeded in so impressing the older and more influential members of the medical profession with a sense of the great wrong that they are constantly perpetrating upon their young professional brethren, and upon society at large, so that they will be willing to take the lead in this much-needed reform. O.

NEW YORK CITY.

"SCARLATINIFORM EXANTHEM."

To the Editor of THE MEDICAL NEWS,

SIR: I read with interest Dr. J. Madison Taylor's note on "Scarlatiniform Exanthem," in THE MEDICAL NEWS of December 19, 1891. It seems to me that the case is probably one of erythema exfoliativum. There is an interesting paper on the recurrent form of this affection, by Dr. Henry William Blanc, in the *International Clinics* for October, p. 348.

I am very glad to see the description of any of the exanthems that resemble scarlatina, as, under the most favorable circumstances, there is much difficulty in making the diagnosis, and I believe much confusion exists in the minds of many members of the profession as to the difference between scarlatina and some of the other exanthems. The scarlatiniform variety of rubella very closely resembles scarlatina in its general appearances, and one is very frequently taken for the other. Very often an attack of erythema from indigestion is mistaken for scarlatina, but much more frequently a mild attack of scarlatina is pronounced roseola or erythema from indigestion.

When we consider the serious consequences that may follow even the mildest attacks of scarlatina, the importance of an early diagnosis is obvious, and I would be glad to see all questions relating to the diagnosis of these diseases discussed at length in the journals.

Yours very truly,

WHARTON SINKLER, M.D.

1600 WALNUT STREET, PHILADELPHIA.

THE PERCENTAGE OF ALBUMIN IN URINE.

To the Editor of THE MEDICAL NEWS,

SIR: I was much pleased to read in THE MEDICAL NEWS, G. M.'s criticism of the careless habit prevailing among medical men of speaking of the percentage of albumin in urine. I have written and spoken so much upon this subject that I hesitate to take up the matter again lest it be regarded tiresome, although I seem to have made a very limited impression. It is true, as G. M. says, that the *blood* contains but 8 per cent. of albumin, and as the albumin of albuminuria comes from the blood, more than 8 per cent. is impossible, whereas in point of fact 2½ per cent. is about the maximum noted. What the writer meant, of course, was 50 *per cent. of the bulk* of urine tested. As the time, trouble, and apparatus required render it practically impossible for the vast majority of physicians to use the gravimetric method for albumin, and as appliances like Esbach's albuminometer are inaccurate, we must, for the most part, continue the method of measurement by bulk, which is, indeed, sufficiently accurate for practical purposes. If men will only say 25 per cent. or 50 per cent. of *bulk*, as it may be, they will be beyond criticism, although I think it better to retain the percentage expression only for *weight*, and to speak of *one-quarter bulk* or *one-half bulk*, as it may be.

JAMES TYSON, M.D.

"ARTIFICIAL EYES INSERTED WITHIN A WEEK AFTER ENUCLEATION."

To the Editor of THE MEDICAL NEWS,

SIR: I observe a note on the early insertion of artificial eyes by Dr. G. M. Gould. May I be permitted to observe that I have been in the habit of ordering artificial eyes for patients who live at a distance, to be inserted within seven or eight days after the operation. In some instances they have been used sooner. I have followed this plan for several years. I have learned that when they are inserted and worn regularly at so early a date a chronic and annoying conjunctivitis is almost certainly set up. To avoid this, I am particular to insist that the eye shall only be worn when in public for two weeks, that it shall be removed and laid aside for a day or two if any irritation arises, and I prescribe a boric-acid lotion to keep the conjunctival sac sweet.

G. STERLING RYERSON, M.D.

60 COLLEGE STREET, TORONTO, CANADA.

NEWS ITEMS.

Medical Legislation in the United States in 1891.—Among the laws of interest to the medical profession passed during the year, we may mention the following: The Immigration Law passed by the last Congress requires medical inspection of all immigrants on arrival. All idiots, insane persons, paupers, or persons likely to become public charges, or persons suffering from loathsome, dangerous, or contagious diseases, as well as felons and assisted persons, are to be sent back to the country from which they came.

Congress has also passed an act establishing five stations for the inspection of meat that is destined for export. The principal duty of the inspector appears to be to search for trichinæ.

The State of Alabama has passed a law requiring all physicians who are not graduates of reputable medical colleges to obtain certificates of qualification from a board of medical examiners.

The State of Arkansas has passed a law allowing the Board of Medical Examiners, after trial, to revoke the license of a physician to practise, if convicted of unprofessional conduct.

The State of Nebraska has passed a law requiring a certificate from the State Board of Health and graduation from a legally chartered medical school or college, before a license to practise is allowed.

Among the States in which bills regulating the practice of medicine have been defeated, may be mentioned Massachusetts, Rhode Island, and Pennsylvania. The latter State has already a registry law. Massachusetts is now one of five States only in which the practice of medicine is unrestricted by law.

The New York State medical practice law, passed during the preceding year, went into effect. It provides that no one shall practise medicine in the State without previously obtaining a license from the State Board of Medical Examiners.

In Massachusetts a law was passed requiring the detention of inmates of State penal and charitable institutions who are suffering from syphilis in a contagious form until the disease is no longer contagious.

The State of Maine requires all persons having charge of infants with sore eyes to report the fact to physicians. It has also passed a law to provide for the registration of vital statistics.

In Massachusetts an attempt was made to restrict the use of arsenic in the manufacture of various articles, but it resulted merely in prohibiting its use in children's toys and confectionery.

The United States Supreme Court has decided that a court may not order a medical examination of a person in a civil case, against his or her will.

The Municipal Court of Boston has decided that a druggist may sell cigars on Sunday, as a drug to be used for the cure of catarrh.—*Boston Medical and Surgical Journal.*

The Outcome of a Malpractice Suit.—The complaint in a suit against Dr. William T. Bull, to recover damages for malpractice, was recently dismissed in a New York court. The suit was originally brought againt the New York Hospital for an operation that it was complained was not successfully performed by Dr. Bull. The verdict on this issue was for the hospital. Suit was then brought against Dr. Bull, with the result stated.

A Journal of Pathology is about to be published at London. The new journal will be under the editorial charge of Dr. Sims Woodhead, who will be assisted by the principal pathologists of Great Britain and Ireland as collaborators and co-editors.

List of Medical Journals.—Dr. Ferdinand King proposes publishing in an early edition of *The Doctors' Weekly* "a complete list of medical, dental, pharmaceutical, veterinary, and scientific journals."

CORRECTION.

In THE MEDICAL NEWS of December 12, 1891, p. 688, in the clinical memorandum "Chloroform-poisoning," it should have been said that *apomorphine* was injected hypodermatically to produce emesis—not pilocarpine.

BOOKS AND PAMPHLETS RECEIVED.

Therapeutics of Diphtheria. By Joseph Burghardt, M.D. From a Lecture Delivered at Vienna, April, 1889. Translated by Charles Raettig. Pamphlet. New York: J. H. Vail & Co., 1891.

Malarial Paralysis. Clinical Lecture Delivered at the Pennsylvania Hospital. By J. M. Da Costa, M.D., LL.D. Reprint, 1891.

The Practical Adjustment of Spectacles. By George M. Gould, M.D. Reprint, 1891.

Addresses and Essays. By G. Frank Lydston, M.D. Chicago, Ill.: Fred. Klein & Co., 1891.

The Surgical Treatment of Pyloric Stenosis. By N. Senn, M.D., Ph.D. Reprint, 1891.

Ueber Myositis syphilitica diffusa s. interstitialis. Von Professor Dr. G. Lewin. Berlin: August Hirschwald, 1891.

Hypnotism versus Morphinism. By William Lee Howard, M.D. Reprint, 1891.

The Atmospheric Tractor and the Uterine Safety-tube. By P. McCahey, M.D. Pamphlet. Philadelphia, 1891.

Traumatic Hemorrhage of the Tympanum Causing Deafness, etc. By S. MacCuen Smith, M.D. Reprint, 1891.

The Treatment of Urethral Stricture, and a New Divulsor for Rapid Dilatation. By Otis K. Newell, M.D. Reprint, 1891.

The Improvement of Evacuators for Litholapaxy. By Otis K. Newell, M.D. Reprint, 1891.

The Anatomical and Histological Dissection of the Human Ear in the Normal and Diseased Conditions. By Adam Politzer, M.D. Translated from the German by George Stone. With 164 Illustrations. London: Baillière, Tindall & Cox, 1892.

Dysmenorrhea: Its Causes and Treatment. By J. W. Felty, M.D., of Abilene, Kan. Reprint, 1891.

A Manual of Practical Obstetrics. By Edward P. Davis, A.M., M.D. With 140 Illustrations, 2 of which are Colored. Philadelphia: P. Blakiston, Son & Co., 1891.

Pulmonary Tuberculosis, Etiological and Therapeutical, Based on an Experimental Investigation. By R. W. Philip, M.A., M.D., F.R.S.E. Edinburgh and London: Young J. Pentland, 1891.

On Dermatol, a Proposed Substitute for Iodoform; Its Uses in Surgical Practice. By Charles A. Powers, M.D. Reprint, 1891.

The Medical News Visiting List, 1892; Thirty Patients per Week. Philadelphia: Lea Bros. & Co., 1891.

Some Facts Every Practitioner Ought to Know About Squint. By Albert Rufus Baker, M.D. Pamphlet. Cleveland, 1891.

The Electrical Treatment of Fibroid Tumors, with an Analysis of Forty-six Cases. By G. Betton Massey, M.D. Reprint, 1891.

Announcement of the Sheppard Asylum, a Hospital for Mental Diseases, Baltimore, Md., 1891.

Special Report of the Cause and Prevention of Swine-plague (United States Department of Agriculture, Bureau of Animal Industry). Results of Experiments Conducted under the Direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry. By Theobald Smith, Ph.B., M.D. Washington: Government Printing Office, 1891.

Human Monstrosities. Vol. I. By Barton Cooke Hirst, M.D., and George A. Piersol, M.D. With 7 Photographic Reproductions and 18 Wood-cuts. Philadelphia: Lea Bros. & Co., 1891.

A Vegetable Plate; also, A New Technique in Intestinal Anastomosis. By Robert H. M. Dawbarn, M.D.

West Virginia Resolutions. By Webb J. Kelley, M.D. Reprint, 1891.

Medical Department, University of Wooster, Cleveland, Ohio; Announcement for 1892. Pamphlet.

Report of the Surgeon-General of the Army to the Secretary of War, for the Fiscal Year Ending June 30, 1891. Washington: Government Printing Office, 1891.

The Medical Profession, and Who Should Enter It. By Charles H. Merz, A.M., M.D. Reprint, 1891.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Assisted by Walter Chrystie, M.D. With Illustrations. Philadelphia: Lea Bros. & Co., 1891.

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ORIGINAL ARTICLES.

LATE SYPHILIS.[1]

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MORE than any other disease, not excepting tuberculosis or carcinoma, syphilis is the common meeting-ground of us all, physicians, surgeons, obstetricians, specialists, pathologists, sanitarians.

Practitioner or philosopher, it matters not, there is to each a mighty interest in the study of the nature, the action, the effects, of this scourge of humanity. Modified, attenuated by transmission through a dozen generations, it is still a dreadful and a dreaded ill. Were there only the early lesions, the primary sore, the cutaneous efflorescences; the mucous erosions; did it run its course in weeks or months; were its subjects then left well, changed only as one is changed after an attack of vaccinia, syphilis would take its place among the minor ills, not altogether an ill, for there would be secured by its passage through the body protection for the future. And this is its history in a large proportion of cases. Because of the action of the normal law of infectious diseases, and doubtless still more because of a widespread, may it not be said universal, syphilization through the centuries, the intensity of its action has been so lessened that in two-thirds, it may be four-fifths, some would have us believe nine-tenths, of the cases to-day, the duration of the attack may be measured by weeks, at least by a few years, and its severity is so slight that we might almost speak of the benignity instead of the malignancy of the disease. To say with even close approximation to truth what proportion of cases end with the superficial manifestations is impossible. Hospital statistics are of little value. Oftentimes, patients in the early stage of the disease are excluded. Generally, only in limited number are they compelled to cease work and be cared for in the wards. As a rule, those that ask public assistance are wanderers, whose life-history cannot be traced, who not seldom are, first and last, at many hospitals, or they again and again appear at the same hospital, to swell the numbers and vitiate the statistics. Nothing could more conduce to error than to take the reports of any institution, or any set of institutions, and base a conclusion upon figures as to the actual ratio of organic lesions to early manifestations.

The case-books of specialists will not furnish the required data. The masters in this department of surgery must have under care organic lesions far in excess of their actual proportionate occurrence. The ordinary practitioner of to-day can seldom furnish the desired information, for of his *clientèle* it may largely be declared "*varium et mutabile semper.*" The family physician who has known his cases from the cradle to the grave may tell us much, but he is fast passing away, and is even now but occasionally seen.

Careful examination of the sick-reports of armies having long terms of service would be of great value. As it is, though we are each largely influenced by personal observations, the almost universal feeling is that in about three out of four, or four out of five, of the acquired cases, the disease is short-lived, and does but little damage.

Unfortunately for the prognosis in any given case, there is nothing in either the character, the extent, or the intensity of the early symptoms, nothing in the course and duration of treatment, that makes it certain that in time all will be well with the individual, that either spontaneously or by art the disease will in time have become eliminated. Nothing except a reinfection can make apparent that it is not merely latent, to reappear at some distant day. But it certainly is hard to understand how it is that the milder the earlier manfestations the greater is the liability to the occurrence of grave late lesions. Is the poison eliminated through the cutaneous and mucous rashes and patches? Are not such eruptions indices of the intensity of infection? As a rule, are not the later symptoms and sequelæ of other infectious diseases milder and more likely to be escaped when there is little disturbance at first than when it is otherwise? Who regards a child as better and for a longer time protected against variola, that is, its system more thoroughly infected by vaccinia, in direct proportion to the fewness of vesicles and the absence of local and constitutional disorders?

Those syphilitic by inheritance suffer from the late lesions in far greater ratio, and this cannot surprise us when regard is had to the developmental

[1] Read at the Congress of American Physicians and Surgeons, September 23, 1891.

activity of intra-uterine life, and the usual impossibility of therapeutically affecting the disease during that stage of its evolution.

It is with the smaller fraction of cases in which there is something more than superficial manifestations — with the organic, destructive, deforming lesions, with the affections that may not show themselves for many years, with "late syphilis"— that we have now to do.

Neither chronologically nor anatomically is there a sharply-defined line of demarcation between the early and the late constitutional symptoms. The one may be indefinitely prolonged, the other very early manifested; cutaneous and mucous lesions may not be confined to the first months or years; the visceral affections may be synchronous with, or even precede the common eruptions. But, speaking generally, there is a pathologic distinction of great value: the late lesions are neo-formative; the early hardly ever so; the late so largely gummatous that the gumma is the sign and seal of the tertiaries. Further, they are not communicable.

As a rule, to which, however, there are not a few exceptions, the late lesions are quietly developed, their existence often announced only when destructive action has produced its effect in irreparable loss of substance, Nature having made no effort to expel the disease, which, no longer a foreign, toxic intruder, has become a part and parcel of the economy. Rarely are the new formations observed before the the end of the first year; they rapidly become more frequent up to the end of the third year. Comparatively seldom are they first developed after the close of the fifth year.

Only with life itself ends the possibility of gummata forming in one who has acquired syphilis, and even when the disease is inherited the outbreak may be delayed until the body has reached its full maturity. No region, no organ, no tissue is exempt from invasion, with resulting new-growths in mass diffused, or in the arterial walls. Of most frequent occurrence, and therefore of greatest interest, are the affections of the bones and of the nervous centers—the first known from early times, the second recognized and understood only within the period of our own lives.

That the skeleton should be attacked is not surprising, when its structure and functions are remembered. Bone is not, as all are more or less inclined to regard it, mere formed material serving for support, protection, and muscle-attachment, but in its more important, physiologically more valuable part, it is formative, a species of lymph-gland, liberally supplied with blood, and active in effecting those corpuscle-changes on the perfection of which depends the health of the whole body. If this is so, why then, it may be asked, is not its affection an early one, and not a lesion of advanced syphilitic life only. Is it not so?

Besides the well-known characteristic osteocopic pains and periosteal swellings of brief existence, are not a few of the feebler, more diffused, more fugitive aches in leg, chest, and head, not a little of the general weakness and marked anemia of the first months, due to infected blood passing through the bone-vessels (the swollen, irritated lymphoid cells resulting, a part of the general adenopathy) and to the impairment of the functional value of the bone activity? Coming on at an ill-defined later period, the new formations are in those parts in which normal cell-changes are most decided, the vessels of which are most abundant, and that are most subject to the action of slight traumatisms, tendon-strains, and atmospheric influences.

In this, syphilis is like tuberculosis and osteomyelitis; and in the resemblances in location and course of specific bone-disease to the other affections just named, may there not be found reasons for believing that, like them, it is of mycotic origin, the definite organisms of which may not long escape detection?

The lesion may be single or multiple, confined to a single bone or present in many, asymmetrical or symmetrical. That there is occasionally affection of corresponding bones on both sides of the median line of the body, either synchronously or in quick succession, is a fact, though without doubt it is exceptionally so, in marked contrast to the symmetrical manifestations of the earlier period.

The three varieties of bone-inflammations are present as in no other disease; a rarefying, condensing, and developing osteitis occurring together, in the same bone it may be, much more often in separate parts of the skeleton more or less remote, or following each other at variable intervals of time. Excluding the bones of the head and face, the affected parts of the skeleton rarely show the molecular destruction of caries in comparison with the death in mass of necrosis, and even the latter is ordinarily limited to but a small part of the tissue involved (the sequestrum seldom being of any considerable size) and more often due to excess of reparative action, than to a primary cutting off of the blood-supply.

Liquefaction is rarely observed and true suppuration only as an accident, when there is an added infection by the pus-formers. Rarefaction and condensation go on together to an extent unequalled in any other form of bone-inflammation, and such marked association may be accepted as strongly indicative, if not absolutely demonstrative, of specific nature. New formation of bone on the interior, the exterior, and at the ends of the diaphysis, is a common result; but, as a rule, the weight

of the deformed bone is not proportionate to its size, and not seldom it falls below the normal, so great has been the rarefaction, which may, and at times does, reach such a degree that fracture follows slight violence or muscular action. Such lesion may be the first observed indication of existing syphilis, and its occurrence should always excite marked suspicion whether the subject of it is adult or child. Very possibly there is something more than simple rarefaction in these luetic bones that makes them so brittle, the strengthening fibers not only being few in number but each and all abnormally weak as a part of the general depravity that belongs to syphilis.

In the long bones it is above rather than below the epiphyseal line that the inflammation is, as a rule, located; hence the comparative infrequency of secondary joint-affection; though the gumma may form under the encrusting cartilage, and by its resulting destructive action upon a part of the articulating surface, or later by pushing its way into the synovial cavity, it may set up joint-disease, specific or common, that, unlike the bone-inflammation, is often suppurative. Curiously enough it is not absolutely certain that such disease will follow the intrusion and prolonged residence of the gummatous mass in the joint-cavity. The frequency of periosteal disturbances, both early and late, exudative and gummatous, may be due not only to a primary infection of the affected area, but to extension to it from the interior of the bone along the Haversian canals or the tissue in the extra-epiphyseal region to the deeper layer of the periosteum, the continuity of which is a demonstrated anatomic fact. Were as careful examination made of the bones of syphilitics as of their throats, lungs, or livers, it is highly probable that osseous lesions, congestive, exudative, and neo-formative, would be found to be of great frequency—existing often when not at all suspected. As ordinarily seen at the present day, extensively destructive and deforming bone-inflammations are almost confined to the head and the nasal regions. It is but rarely that there is found one of those greatly enlarged, rough, as it were worm-eaten and stalactite-covered long bones that are so common in the museum collections of forty, sixty, and one hundred years ago. The reasons for this are not far to seek. The disease is milder, the patients are better fed and better housed, the proper treatment is more systematically and thoroughly applied. Even in the vault of the cranium great gummatous ulcerations and mortifications are not so very often met with, and in the sternum they are surgical curiosities. Yet these are the bones in which the serpiginous and tunneling advance of the morbid process can most freely take place. It is in the skeleton of the nose and parts adjacent, that specific caries and necrosis are most common, the reason for which is (in large measure doubtless) found in the exposed position of the bones, the thinness of some of them, the unusual abundance of small vessels as compared with the number of main feeding-trunks, and the intimate fusion of mucous membrane and periosteum. No better illustration could be found of the oftentimes insidious symptomless course of gummata, than is afforded by many cases of these naso-pharyngeal affections, the existence of which may be revealed only after large tracts of bone have become necrotic. In the adult and when acquired, there is seldom difficulty in recognizing the specific nature of the lesion, except in those cases primarily epiphyseal and later involving the joint, in which a preceding syphilitic course cannot be ascertained, either by tracing the history of the patient or carefully searching for the physical evidences of cutaneous or deeper affections. In such cases the diagnosis must rest upon the slowness of development, the non-existence of rheumatic or tuberculous disease in other parts of the body, the absence of pain except upon pressure, and then only in limited and fixed areas, the slight impairment or non-impairment of the joint-motions, the failure of ordinary therapeutic measures to effect relief, and the decided, often rapid, benefit from the administration of the iodides. In cases by inheritance, especially when the infantile manifestions have been slight and the bone-disease appears at eight, fifteen, or twenty years of age, its specific nature can be easily, and again and again has been, misunderstood.

Though a very large proportion—nine-tenths or more—of chronic bone-disease and joint-disease, in the child, the adolescent, and the young adult, is tuberculous, yet the cases in which it is of syphilitic origin are by no means few. How may they be recognized?

1. By location. The lesion is in all probability in a long bone, not an irregular one, not a vertebra, not in the tarsus or the carpus, but in the tibia (and this above all others), or in the femur or a phalanx. If in the long bone it is much more probably in its diaphysis than in the epiphysis. Take away the cases of affections of the articulating extremities of the femur, the tibia, the humerus, the forearm bones, how many cases of tuberculous disease of the long bones would remain?

2. By recognition of traces on the cornea, the teeth, or the skin, of previous syphilitic affections, and that, too, perhaps in one markedly hard of hearing, and evidently feebly developed.

3. By application of the therapeutic test.

4. When practicable, by inoculation. Of course, if it can be determined that one or both parents

were syphilitic before the patient was born the difficulties of diagnosis are greatly lessened.

The most frequent, the most dangerous, and until recently, the least understood lesions, are those of the nervous system, to which "syphilis is a veritable poison." In the intensity of brain-activity and the necessarily correlated, always abundant yet never constant, blood-supply, is found the explanation of the fact that in one-third of the cases of tertiary lues decided disturbances of motion, sensation, or intellection are observed; taking no account of the irritative neuralgias, the cries for healthy blood, that more or less severe, more or less fugitive, are seldom or never absent in the earlier months. Rarely found among the inherited affections of children, nerve-syphilis attacks men much more often than women, and especially seizes upon the brain-workers, those engaged in professional or literary pursuits, or such business as calls for undue, irregular and quick use of the organs of perception and feeling. Alcoholic poisoning, with its alternating mental exaltations and depressions, and its slowly advancing but certain and permanent arterial degenerations, strongly favors its development. Any debilitating cause of long continuance increases the liability to its manifestation, and not least among them is malaria. The new-growths, here as elsewhere, diffused, circumscribed, or in the vessel-walls, are seldom of large extent, are likely to be multiple, and occur in regions in direct proportion to their vascularity, *i.e.*, to their functional value; much more often, therefore, on or near the surface, than deep in the substance of the nervous mass. Their effects are due to pressure, to involvement and consequent destruction of tissues of importance, to irritative and inflammatory changes around and about, to the direct or indirect impeding or cutting off the inflow, or much more rarely obstructing the outflow of blood from a given area, to (but only exceptionally) extravasation from a thinned and dilated artery. These effects—in other words, the various morbid phenomena observed, the pains, convulsions, pareses, paralyses, vertigos, failures of the special senses, disturbances of sleep, of thought, of memory, coma—are in themselves in no respect different from those produced by non-syphilitic causes.

It is upon associated conditions of age, of general health, of antecedent history, of previous attacks, of transitory course, of combined, perhaps strangely combined morbid conditions, of remissions or intermissions, spontaneous or therapeutically secured, that the differential diagnosis is based. The new-growths, whether in the meninges alone, or in both envelope and cortex, must follow the same course as similar formations in other parts of the body—occasionally becoming spontaneously absorbed, at times liquefying, even perhaps to the extent of producing cysts, giving no evidence of their specific origin, more often reduced in size, or, unfortunately not very often, entirely removed by proper treatment, producing limited cerebral softening because of the anemia consequent upon vessel-obliterations or plugging, or the specific irritation-changes outside of the infected area—such changes being more dangerous than the growth itself, the the pressure of which increases so slowly that the brain can readily accommodate itself to it.

In his address at the Berlin Congress, Mr. Horsley, speaking of the cerebral gumma declared that "Medicinal treatment in nowise cures, and only very temporarily alleviates the trouble. . . . Excision offers the only chance for the patient." Is this the fact? Has not again and again much more than very temporary alleviation followed the administration of the iodides, with or without the mercurials, in cases in which there was present every ordinary indication of the existence of an intra-cranial gumma? However great the advances of brain-surgery in the last few years, would not the outlook of a syphilitic be much worse than it is, if only in the exposure and removal of the gumma could be found a chance of recovery? To be sure, he is much more likely to have a sclerotic patch than a distinct tumor, but on the other hand a pre-operative diagnosis between the two lesions is not always easy, and is not seldom impossible.

The affections of motion, of sensation, and of intellection are frequent, in the order given. The first, at some time or other, in some degree or other, are present in every case. The second—far more often on the side of diminution than of excess (for hyperesthesias, except as neuralgias and headaches, are comparatively rare)—are frequently absent, and if they exist, are commonly of but moderate intensity. The third form but a small part of the lesions under observation, whether one looks for impairment of memory, for change of temper, for more or less decided melancholia or mania, for the grave and inevitably lethal symptoms of general paralysis, or for the obscuration, partial or total, of coma that so often presages speedy death.

The disturbances of motion may show themselves either in increase or in diminution of movement, in convulsions or in paralysis. That epileptiform seizures should frequently occur is only what might be expected. The motor area of the cortex is a region of great functional activity, consequently of very numerous bloodvessels; as a necessary result, new-growths in abundance are developed and meningo-encephalic adhesions are formed, and excitation by irritation or pressure very naturally follows. Though occasionally generalized and like common epilepsy, the disease is far more often very akin to the Jack-

sonian affection; so much so, that recognition of its specific nature oftentimes is not made—sometimes, perhaps, cannot be. But convulsions very rarely appear for the first time in early or middle adult life, except as the result of traumatism; occurring primarily after fifty, they are of grave import with reference to general paralysis, or organic disease of the kidney or heart. It is in the interim between the time of the attacks of childhood and of approaching old age that the syphilitic seizures occur; and this fact is of much diagnostic value—enough, almost to establish specific nature in the absence of other evidence.

Hysteria may mimic syphilis, as it does so many other affections, but it is of infrequent occurrence in men. Brain-syphilis, in any of its manifestations, is comparatively seldom seen in women, and the hysterical disorders of sensation are not present.

The paralyses are much more common, constituting, it has been estimated, one-fifth of all paralyses observed, and, speaking generally, are of graver import than are the convulsions, since, aside from certain of them occurring early, they are indicative of more extensive new-growth or more destructive lesion of adjacent parts.

Pareses rather than paralyses exist in many cases; these motor disturbances are strangely combined, often intermittent, not seldom one-sided, passing at times from one side to the other, either quickly or only after the lapse, it may be, of many months of marked improvement, or even of entire relief of symptoms. Coming on slowly as a rule, with no antecedent apoplexy, arresting, at times completely, the action of a single muscle or set of muscles, while slightly impairing that of others near or far away; attacking the ocular muscles, the nerves, of which the third, fourth, and sixth are rarely involved in the paralyzing lesions of other origin; preceded oftentimes by prodromal cephalalgias of decided, even intense, severity; frequently, on the other hand, associated with no material disturbances of sensation, the mental faculties remaining, in general, unaffected; often yielding readily to treatment, early and thoroughly applied, incapable of change for the better when due to destructive softenings or cicatricial repair-changes; these paralyses, by their location, extent, and time of appearance, are ordinarily readily recognized as of specific origin, and serve as indices of the parts of the brain especially diseased. They are often associated with marked affection of the speech-center, or at times with disturbances of the special senses; aphasia and sense-impairments being ordinarily incomplete, fugitive, intermittent, recurring, it may be, only at irregular and remote intervals.

Sensation, frequently unaffected, certainly in any marked degree, may be diminished or exaggerated. The agonizing headaches of the earlier stages of the disease, when they are often of cranial rather than of cerebral origin, are not so very seldom equalled by those associated with the late deep-seated lesions; and at times there are observed severe, lasting facial neuralgias from involvement of the fifth nerve within the cranium. The special senses share, but in a much less degree than might be expected, in the sensory disturbances of the intra-cranial affections. In by far the larger number of cases of specific blindness and deafness, the producing lesion is located in the orbit and in the ear.

Disturbances of intellection, to the extent of somewhat enfeebled mental action, especially on the side of memory, are of such common occurrence that they may be regarded as almost necessarily associated with any and all of the brain-lesions. They are due, in great measure certainly, to the disturbed circulation within the cranium, and are matters of little moment, being often simply expressions on the part of the cerebrum of the general depression that syphilis always produces. In a limited number of cases, the psychic disturbances are much more positive. The subjects of them become unfit for business, are excessively irritable, markedly melancholic, actively maniacal, or even seemingly demented. Many of them become general paralytics; and a large proportion of those having this almost certainly fatal affection have a syphilitic history, though the specific poisoning has been only one of the depraving conditions that have brought about the mental state. In all the psychic affections in which clear evidence cannot be found of a limited, circumscribed brain-lesion, anti-syphilitic treatment, instead of proving beneficial, is positively injurious.

In certain cases—fortunately they are very few—most marked motor sensory and mental disturbances occur, suddenly and simultaneously; the patient being found, ordinarily after sleep, in a state of stupor, from which it is usually possible to arouse him, but only partially, it may be but for the moment. The muscles of the extremities are all thoroughly relaxed, as are also those of the bladder and rectum. Sensation is greatly impaired or abolished. The pulse-rate is decidedly lessened, the breathing is slow, and the temperature is sub-normal. This syphilitic coma may or may not have prodromata, sensory or motor; may come on in those in whom the syphilitic disease is active or latent; may appear early or only many years after the primary infection. It may terminate in speedy death or in recovery, which is often followed by recurrent attacks, sooner or later destroying life.

Under a mercurial treatment, promptly and vigorously instituted and persistently maintained for many months, relief, even permanent, may be expected and secured.

Spinal lesions are of infrequent occurrence, both actually and as compared with cerebral lesions. As cranial exostoses may press upon the dura, so may vertebral outgrowths press upon the adjacent membranes, and the spinal canal being narrow, a mass of moderate size may cause destruction of the contained cord, directly by compression, indirectly and more often by interference with the blood-supply. Neoplasms in the meninges or in the cord itself will by pressure produce pains in the affected area or at the remote points of nerve-distribution; and paralysis, according to size and location, limited or extensive, of a single muscle or set of muscles; or hemiplegia, paraplegia, it may be of trunk, arms, and legs, due either to compression or degeneration of the cord. The associated sensory disturbances may be slight or severe, intermittent or fugitive, on a paralyzed side or on the opposite, but the deeper situation of the gray matter always protects in greater or less measure against its compression, still more its destruction.

A question of much interest is that of the causative relationship of syphilis to locomotor ataxia. Is this disease one of the late specific spinal lesions? That the majority and a large majority of ataxics have at some time or other had syphilis cannot be questioned. It has been declared that a syphilitic history is more often found in connection with tabes than a rheumatic history is found in connection with disease of the heart. But tabes certainly is not of true gummatous origin, nor can the sclerosis be regarded as the result of the diffused formation so often found in the cerebro-spinal axis. Syphilitic treatment generally, may it not be said always? fails to cure—may not even retard the evolution of the symptoms. In no small number of cases there has been no luetic infection, and when there has been such, view the disease as we may, locomotor ataxia can only be regarded as a sequel, not a lesion, of syphilis; bearing perhaps, as has been suggested, some such relationship as post-diphtheritic paralysis does to diphtheria, though it is much easier to understand an early-displayed paralyzing action of the ptomaïnes of an infectious disease than such action manifested five or ten or twenty years after apparently complete subsidence of all local symptoms.

If either the time or the occasion permitted, consideration might well be given the lesions of other parts, of skin, of throat, of lung, of liver it may be, lesions always gummatous in character and destructive in effect. Everywhere and at all times a manifestation of late syphilis means danger to part, danger to life; the latter, while often escaped, not seldom becomes a reality to the fullest extent.

How are we to understand year-long intermissions, with after-development of grave functional and organic disturbances? With the disappearance of an unimportant syphilide, the young man seems to be free of his malady. In physical and mental health he passes the years of maturity, and sturdy children, without spot or blemish, grow up around him. When fifty or sixty or eighty years old, it may be, with the changes inseparable from advancing years, there appear organic affections that are unmistakably specific. Such cases are rare, very rare, if you please, but they nevertheless exist. Where has the disease been in hiding all these many years, and in what shape? Recurrences take place in other affections, but do they closely resemble these late manifestations of syphilis? The adult that in childhood had a white swelling, a hip-disease, or a caries of the spine is very likely to die of pulmonary tuberculosis before he has passed middle life; but the exciting organism has been encapsulated in the primarily-damaged area, and has been set free by a breaking down of the fibrous and osseous envelope, or, without direct relation to the primary lesion, the bacilli have come in from without, producing not a reinfection, but a new infection, and the disease so developed passes through its regular stages from the very first, or the lighting up anew of morbific action in the long-encapsulated mass has caused a new synovitis or a caries, in no respect different from the original. In a femur or tibia that was affected by an osteomyelitis of adolescence, suppurative osteitis may show itself years later. Here there has been a setting free of pyogenic organisms long imprisoned in the bone, or as a place of least resistance the bone has again inflamed under the action of such organisms taken up anew from a distant felon or abscess or ulcer, and carried along in the blood-stream.

The individual from whom a scirrhous breast has been removed may have malignant disease of the bronchial glands, of the stomach, or of the liver after several years of apparent health; but the places of detention and the route of infection can be found and traced. In each of these diseases the recurrence is like the original attack, differing only in the extent and rapidity of its action. Not so with syphilis. There is in this long-delayed manifestation no first or second stage, no initial lesion, no roseola, no mucous patch. Without any inaugurating local or general disturbances there is developed a gumma. Is this the reproduction under the influence of irritation of unknown character of the original chancre, the cutaneous papule, or the temporarily enlarged glands? It is simply, we are told, another step in the advance of the disease arrested for an unusual time at its second halting-place—such arrest, in and of itself, no more strange than the arrest for hours of an attack of intermittent fever. But in this latter affection, when the new start is made, the old cycle is travelled again, the

symptoms are general; and the same may be true if the intermission has been of months' or of years' duration.

But in syphilis the new disturbance is confined to a very limited area—in a bone, in the rectum, or in the cranium—in which, in many cases certainly, there had been no previous disease, at least no evidence of such. No other part of the body may ever be affected; the lesion is purely local. What developed it? A specific organism long dormant at the spot? If it were so, would there not have been in the remote antecedent period of syphilitic activity some evidences of the non-specific overgrowth required for its encapsulation? Consequent upon its presence, would there not have been in the part something more than a fugitive, ill-defined ache? And even this is frequently absent. Is it a poisoning product, like a ptomaïne, of the earlier action that, after long presence in the blood, is carried to the seat of the late manifestation, and there excites the new-formation? Can anyone understand a poisoned state of the blood that is continued through years, the septic chemic agent remaining unchanged, or constantly reproducing itself or being reproduced, without there being any manifest symptoms of departure from the normal standard of health, until at a far distant day it causes a syphilitic new-growth in some part or other?

What is the morbific agent? what suspends its action? where is it stored? what so late starts it up into destructive activity in only one direction, ending in one product, whether the period of latency has been one year or forty years—the same, indeed, if there has been no "sleep-time" after the disappearance of the cutaneous congestive or exudative lesions, and the disease has passed directly from stage to stage? Are there not in this course of syphilis questions of intense interest relating to nature and action—problems well deserving consideration and solution, if solution be possible? But there are other questions that may well be examined—questions of fact, but not respecting the character, location, or effects of lesions.

What are the relations of syphilis to other diseases and to injuries? How is it affected by them and they by it?

Preëxisting tuberculous disease, because of the general weakness induced by it and the lessened power of the cells to protect themselves, renders probable a more severe, often a more rapid, syphilitic course. It is not necessary that such disease should be manifestly active. To the "strumous" individual, other things being equal, a specific infection is always more dangerous, both in the extent and destructiveness of lesions, than it is to others. In negroes and mulattoes, in our country, the severity and, yet more, the persistency of lues, especially in its glandular enlargements and its external gummatous ulcerations, are due, it may well be believed, to the tuberculized soil upon which the specific virus has been implanted, fully as much as to irregular living and neglect of treatment. Certain lesions are more common in tuberculous than non-tuberculous persons, such as the gummatous stenoses of the alimentary tract, especially of the esophagus and rectum.

That specific lesions may become tuberculized has been proved by the occasional bacillary infection of syphilitic lupoid tissue; but only very rarely does the tubercle-bacillus find a nidus in and about a syphilitic new-formation. A partial explanation of this lies doubtless in the fact that in the great majority of cases tuberculosis of parts other than the lungs has been produced, or is likely to be produced, only at an age antedating syphilitic infection, or at least the period of the late manifestations.

Syphilis is not likely to be inoculated upon an individual suffering from carcinoma; and if it is, there is no good reason why the two diseases should not go on each in its natural way. But carcinoma may attack an area in which there have long been specific thickenings and indurations, as in the chronic leucomata of the tongue, in the same way and for the same reason that it is often a direct consequence of non-specific irritative epithelial overgrowths. Occasionally, a gumma undergoes carcinomatous degeneration, more often when situated in the substance of the tongue than anywhere else, and the local affection, no longer amenable to specific treatment, advances steadily from bad to worse, the neighboring gland or glands soon becoming infected, and death resulting at no distant day from weakness, from hemorrhage, or from visceral disease. In certain localities, especially in the breast, a gumma may readily be mistaken for a carcinoma, and in not a few instances the mamma has been removed because of the existence in it of a mass that would have disappeared under treatment by the iodides. If syphilitic growths do not become sarcomatous, they often much resemble sarcomata, and many a reported successful operation for the malignant affection has been really one in which a gumma has been removed. Particularly has this been true of tumors in muscles, and in the orbital cavity.

How does syphilis affect wounds, and how do traumatisms affect the disease? As a rule, the wounds of syphilitics, when the affection is in a passive latent stage, heal as promptly and as kindly as those of others, though union may be delayed or even be prevented until after the patient has been brought under the influence of the anti-specific remedies. This is much less true of wounds of the soft than of the hard parts—*i. e.*, fractures, in which, in

spite of the most judicious treatment, at times false joints will form. When the specific lesions are in process of active evolution, it matters not whether early or late, the chances of interference with proper repair are not few, and no operation should be performed at such a time that with safety can be postponed. Indeed, at any time before performing an operation the success of which depends upon the securing of primary union, it is well to keep the patient for several weeks under the influence of the iodides and mercurials. Very rarely, under any circumstances, does a wound become actually syphilitic.

In one who has had the disease, even though there may not have been a manifestation of it for years, any traumatism may be the starting-point of extensive specific lesions. On the other hand, when the individual becomes syphilitic, an old scar or fracture-callus may break down, just as it may under the influence of scurvy.

Is aneurism in comparatively young subjects, say under forty, consequent upon syphilis? Always? No. In very many cases? In all probability. As one of its most marked effects, the specific disease unquestionably produces endarteritis; and, though this inflammation especially attacks the medium-sized and smaller vessels, it is not limited to them, and the weakening of the walls that it produces cannot but predispose to fusiform or sacculated dilatation.

As respects life, is syphilis a grave disease? Very much so in its inherited form, its lethal influence being exerted from the moment of conception. Four-fifths of the pregnancies terminate prematurely, and of the children born alive the great majority die within a few weeks or months, or at most years. But not seldom after cessation of manifestations, in the intervals of manifestations, or even in the very late tertiary stage, the spermatozoids and ova are sufficiently free from syphilitic influence to permit of the begetting of healthy children. But acquired, in adults, the mortality-rate is very low—how low it is impossible to state, vital statistics on this point being, for obvious reasons, defective and unreliable. In our census report for 1880 it did not reach one per thousand of the whole number of deaths from known causes. How seldom in private practice has it happened to any one of us to have a patient die of syphilitic lesion?

Clinicians, medical and surgical, have learned very thoroughly the coarse lesions, and pathologists the structural character of the new-growth in organs and tissues. Practitioners, general and special, are in unusual degree in accord as to treatment, even as to the extent to which it should be carried. The professional work of the future must be chiefly that of the microscopists, the bacteriologists, and the medical chemists. In the laboratory, not at the bedside, will be revealed the secrets of nature, growth, dissemination, and influence.

If it be possible, sanitarians and political economists have before them the task of working out some practical and practicable plan of controlling the spread of this disease, that damages the young, weakens the strong, infects the innocent, diminishes the results of labor, increases the poor-rates, keeps down the population—that is everywhere and in all respects destructive to the private and the public weal.

ELECTRO-THERAPEUTICS IN AMERICA.[1]

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IN complying with the request of the President of this Association, that I prepare a paper dealing with the earlier work of my late associate Dr. Geo. M. Beard and myself in developing the field of electricity in medicine, and in securing for it professional recognition, I beg in the beginning to bespeak your patient forbearance toward what might under other circumstances seem an undue amount of personal reference. A little more than twenty years ago, electricity was but another name for quackery. When the writer first ventured to present for the consideration of the Medical Society of the State of New York a paper on the "Medical Use of Electricity," an eminent physician on the committee exclaimed: "What, is he regular?" At that time, to call oneself an electro-therapeutist was to confess guilt of the grossest ignorance and fraud. To-day all this is changed. Electricity has followed in the footsteps of our permanent specialties and occupies a position of assured respect.

One of the first in this country to call attention to the use of electricity in medicine was Dr. Thomas Brown, of Albany. In a little work entitled "*The Ethereal Physician*," issued in 1823, he recommended franklinic electricity for paralysis, tic douloureux, epilepsy, chorea, and various other diseases, and a year subsequently a Dr. Everett, of New York, contributed to medical literature his own experiences in the same direction.

Although some good was accomplished, electricity was found to be a most uncertain remedy.

How, indeed, could it be otherwise? Induction electricity had not yet been discovered, and both the old cylinder static machine and the voltaic pile were uncertain and inconstant in their action. All efforts at this time, therefore, for the purpose of

[1] Read at the first annual meeting of the American Electro-therapeutic Association, held at Philadelphia, Sept. 24, 1891.

giving importance and dignity to electro-therapeutics signally failed, and it was not only neglected, but fell into absolute disrepute. But when induction electricity was discovered by Faraday, in 1832, able men abroad became interested in the scientific investigation of the subject. In this country it was taken up in a far less scientific spirit. Most extravagant and incredible statements as to the results to be obtained from faradization were freely made, and although a few honest physicians endeavored to give respectability to electro-therapeutics, the majority of workers in this department were laymen, having no part or lot in the realm of science, and as devoid of conscience as of intellect. Many of these practitioners combined localized with general faradization, and some employed the latter exclusively, though with little definiteness or precision.

And yet it must be admitted, I think, that many of these empirics, by general or localized faradization, or both combined, or by methods various and inconstant, achieved successes in the treatment of disease surpassing those obtained by many physicians at the present day. Some twenty years ago I met at the bedside of a patient an old gentleman of whom I had frequently heard, and who had for years been known to very many practitioners of New York. Without possessing the slightest knowledge of anatomy or physiology, or of the principles and practice of medicine, this man had for thirty-five years followed the so-called business of an electrician, and had treated an enormous number of persons. I was amused by many of his absurdities of statement, but was thoroughly impressed by his unswerving integrity and vast experience, and I naturally desired to know more of his method and processes in a field, at that date, so little cultivated by the profession. On many occasions subsequently I carefully watched his methods of procedure, and saw him successful in desperate forms of chorea, neuralgia, and in many other forms of chronic nervous disease.

The first case that in this way fell under my observation was one of most severe and persistent nephralgia. For over five months this patient—a young man of about thirty-five—had every day suffered paroxysmal attacks of pain of the most agonizing character. He had unsuccessfully sought relief in every direction. Seven applications given by this old man secured to the patient complete and permanent relief.

A second case that impressed me strongly occurred in the person of a little girl about ten years of age, suffering from a severe form of St. Vitus's dance of eight months' standing. She had taken medicine freely, and, so far as I could judge, judiciously enough. Among other things, I found on examining one of her old prescription bottles that Fowler's solution had been taken in considerable quantity. The patient was treated in the usual stereotyped manner of this operator, and after less than a dozen applications her recovery was assured.

Here are but two of many unwritten cases that in this way were forced upon my attention, and induced me at that time to study more closely the clinical side of electro-therapeutics. Now, this man knew nothing of electro-physiology, or of kindred departments, and while he had a superficial idea of the effects of the constant current, he had never used it, but had confined himself to the use of the faradic current. So far as concerns scientific electro-therapeutics, he existed as a most remarkable example of profound ignorance and immense experience, associated with perfect honesty of intention. He never enunciated an idea; neither had he any conception of the principle on which he worked and through which he wrought cures. He was, however, so thoroughly the master of the method that he invariably used, that the truth of the saying, "that it is not so much electricity that cures as the manner of using it," never seemed so clear as when comparing his effective manipulations with the awkward slipshod movements that are only too frequently the results of careless attempts at imitation.

About this time I renewed an old acquaintance with Dr. Geo. M. Beard, who had recently come to New York and had become connected with the Demilt Dispensary. He also was more or less interested in the subject, and informed me that while still a student at Yale, he had in his own person experienced much benefit from the use of electricity in the relief of a condition of persistent indigestion and nervousness. Supplying ourselves with such apparatus as could be obtained at that date, and depending almost entirely for cases on such as could be sent for free treatment from the dispensary, we began work in a deliberate and systematic way, for the purpose of determining as far as possible the real therapeutic value of electricity. But instead of localized, we now used general electrization, and with results that were far beyond our anticipation. We found that many of the patients thus treated were not only relieved of their local symptoms, but were also improved very decidedly in their general condition. Old cases of indigestion with the usual accompanying symptoms, and a variety of disorders associated with general debility, were very appreciably relieved, and in some cases entirely or approximately cured by persistent treatment. These results and experiences we subsequently embodied in a series of five articles in the *New York Medical Record* under the title of "The Medical Use of Electricity," and the novelty of the views therein expressed and the impression they made was evidenced by the reception accorded them both here and abroad.

At the present time, when the wide therapeutic effects of electricity are so generally appreciated, it is difficult to indicate the intense degree of interest developd by the enunciation of such positive and radical statements in regard to an agent that was looked upon by scientific men only with contempt, or, at least, with indifference. It must be remembered that at that date the whole subject was a veritable *terra incognita*, and to touch it, as one worthy friend remarked to me, was to imperil one's professional reputation. Very naturally, in entering a field so untried, I was desirous of the moral support of men of character and standing in the profession. One of our most eminent surgeons, a man most kindly in nature, broad in his views, and well disposed toward myself, said to me: "It isn't worth your while—any old woman can apply electricity." Another physician, and former teacher, equally eminent in medicine and an author of great fame, prematurely exclaimed as I began to speak of the matter to him: "Oh, I cannot lend my name to any such project!" "But I do not wish your name," I replied; "I simply came to tell you what our idea is, and to ask your opinion as to the propriety of endeavoring to develop the subject of electricity in a legitimate and scientific way." He advised me to keep on in the regular path, and not to meddle with it, but let it remain where it belonged—in the keeping of charlatans.

During my medical college course I do not remember to have once heard the word electricity in connection with the treatment of disease. Medical journals seldom referred to it in any way, and of American literature upon the subject, with the exception of Garrett's ponderous and unphilosophic work, there was absolutely none. It was impossible to obtain any form of apparatus for the generation of the galvanic current, and all our earlier efforts in this direction were made with the inconstant, inconvenient, and bad-smelling voltaic pile. Electricity was known to be of value in stimulating muscular contractions, and paralysis was believed to be about the only condition for which its use was indicated.

Duchenne and Remak abroad, and after them Benedict, Schultz, Meyer, Neumann, Rosenthal, Frommhold, Eulenberg, and others, worked up the field of localized electrization, and in proportion as their knowledge was limited in regard to the whole matter, in just that proportion were they dogmatic in the assertion of their beliefs. They laid especial stress on physiologic experiments without having yet learned much about the physical effects of electricity. One preferred the galvanic and another the faradic current, and heated controversies were held as to whether the better therapeutic effects were obtained by the application of the current to the motor points or to the muscles themselves. Fierce and unreasonable controversies were carried on.

When, therefore, these articles of ours, to which reference has been made, asserted and demonstrated that electrization was something more than a mere stimulant, that it was also a tonic of very remarkable efficacy, and as such was indicated in a wide range of diseases associated with general debility and impaired nutrition, the medical press, here and elsewhere, gave to the subject the most careful consideration. In Germany everything relating to these new suggestions was reproduced and discussed, and to Professor Erb, of Heidelberg, more than to any other, is due the fact that the method by which general nutrition was best influenced was received with so much interest and appreciation.

Up to this time, as far as can be ascertained, men of science had confined themselves solely to purely localized methods of application; and it is a matter of observation that they failed to secure results equal to those of a few empirics who, in spite of their own ignorance, were in daily use of broader and more rational and effective methods. The defect of these empirics, therefore, was not in their results, which oftentimes were truly remarkable, but in the fact that their ignorance of medicine rendered it impossible for them to discriminate in their cases or in their methods, or to intelligently communicate their experience to others, or in any way make it of permanent value to science.

Our own claims in regard to this more general method of using electricity as practised by some of these empirics are: 1st. To have improved it, reduced it to a system and given it a scientific basis, and to have shown its relation to other methods of using electricity; in short, to have done for the method of general faradization what Duchenne did for localized faradization. 2d. To have interpreted its special and general effects; to have given it a name, pointing out the true rationale of the method, and the indications for its use. 3d. To have first called the attention of the profession to this method, enforcing our views by the results of personal experiments, and awakening an immediate interest in this department of therapeutics. 4th. To have discovered in our experiments with this method that electrization is a tonic of great and varied efficacy, and therefore indicated for many conditions; and to have forced this fact on the professional mind until it has become widely accepted, and has become the basis for the use of electricity in a multitude of diseases. This subject was still further developed when we issued the first edition of our *Treatise on the Medical and Surgical Uses of Electricity*, but it was not until the second edition that another important method, which we termed central galvaniza-

tion, was considered with the fulness of detail that its importance demanded. It is so thoroughly established that external applications of the galvanic current penetrate directly to and appreciably affect the brain, and furthermore, that such applications are often of immense service, that it would be unnecessary to advocate its utility were it not that authoritative names were pledged to its condemnation. I cannot attempt in this paper to consider fully the grounds of this condemnation; but a reference to some of the objections of Cyon, as put forth in his *Principles of Electro-therapeutics*, cannot fail to show their unreasonableness and to carry the conviction that the learned teacher is more theoretic than practical. Because we cannot localize the galvanic current in special portions of the brain; because we cannot perfectly explain or understand its physiological action on the centers of thought and motion, or why this action seems to be frequently adapted for the relief of many symptoms of cerebral disturbance; and finally, because we cannot uniformly predict that relief will follow the use of central galvanization in certain conditions—these considerations should be no bar to our use of the current in this way.

In a somewhat varied experience I have observed so many suggestive results follow the use of central galvanization in the psychoses, that I have but little doubt, if in our insane-asylums a systematic and patient trial of this method could be adopted, that a certain proportion of cases now regarded as hopeless would be more or less benefited. In following the views and suggestions of Apostoli, much good work has been done in America in gynecologic electro-therapeutics, but the impetus to these investigations came from abroad, and in this department we have followed rather than led.

That there has been gross exaggeration, both conscious and unconscious, as to the magic effects of electricity in the dispersion of fibroid tumors, is undeniably true. Notwithstanding all this, however, we have cause for congratulation that electricity has proved so efficient a remedy in so many of these cases. Among those who have recorded their observations and the results of their work in this department of electro-therapeutic work are Engelmann, Massey, Martin, Mundé, Grandin, Gunning, Goelet, Bigelow, Kellogg, Hutchinson, and not a few others. The revival of the use of static electricity in France some dozen years ago led to the discovery of what is now well known as the static induction current of Dr. Wm. Morton. This discovery is entirely American, and while it yet remains for us to definitely differentiate between it and the ordinary current of induction as regards therapeutic effects, it is undoubtedly a suggestion of value and widens the utility of the Holtz machine. The use of electricity in the treatment of extra-uterine pregnancy is another most important advance in electro-therapeutics that is entirely American; and were accidents of gestation of this kind an everyday affair instead of comparatively infrequent, the discovery of the great value of electricity in their treatment might well be considered one of the most important of recent therapeutic procedures.

It is unfortunately true that there are many who still decry the method and advocate the use of the knife in those early-discovered cases in which electricity is indicated.

They cannot deny that, if detected before the third month, electricity is capable of destroying the fetal life without pain or danger to the mother. But, they say, a foreign body is left, therefore the knife should be used; and this in the face of proofs innumerable that no possible harm results from the contents of the fetal sac, which become encysted and quickly absorbed. Two assertions are often made by the opponents of the electric method of treatment: 1st. That it is almost impossible to detect the condition before the third month, and that many supposed cases of extra-uterine pregnancy are not cases of pregnancy at all. 2d. That electricity is by no means sure to destroy the fetal life.

In reply to the first of these, I have this much to say: A patient comes to you with a cessation of menstruation of two or three months' standing, associated with paroxysms of pain with or without a slight show of blood. On examination you distinctly feel a slight enlargement along the line of the Fallopian tube. It may or may not be a case of tubal gestation, but you treat it with electricity, and the pain immediately ceases and the tumor quickly disappears. What could it have been? Certainly not an ordinary cyst or solid tumor, for these do not disappear in this way. The only rational conclusion is that it was an ectopic gestation—the only possible condition that would thus readily resolve itself under the electric treatment. In regard to the second objection, the difficulty has been that the faradic current is too often used to the exclusion of the galvanic. It is a great mistake to rely on the faradic current, since it is far more inefficient in its destructive properties than is the galvanic.

It possesses in equal degree neither the physical, chemic, nor physiologic effects of the galvanic current, while the mechanical effects are common to both currents. The galvanic current always kills. In the sixteen cases of extra-uterine pregnancy that have come under the personal observation and treatment of the writer, the galvanic current was exclusively used, and always with success.

CONCLUSIONS. — The progress of electro-therapeutics has been neither rapid nor uniform; it has been marked by alternations of eras of extravagant faith and activity with eras of equally extravagant distrust and neglect. Though often in advance of, and unaided by, physiology and pathology, it has been so closely dependent on the mechanical contrivances for generating and controlling the electric current that it has necessarily risen and fallen with the progress of mechanical art, and to a certain extent has shared in the fluctuations of electro-physics. Beginning with the mythic procedures of the Roman physicians with electric fishes, it had long slumbered in the forgetfulness of ages, when it was revived in the eighteenth century by the experiments with frictional electricity and the great discovery of Galvani. The interest thus aroused by galvanism and the invention of the voltaic pile rose to a height of enthusiasm that led to the belief that the problem of therapeutics was solved forever, until from repeated failures and disappointments there ensued a reaction of indifference that for many years was only disturbed by the birth of electro-puncture and by experiments in electro-surgery.

The discovery of induction and the modern improvements in galvanic batteries have inaugurated a new revival of electro-therapeutics in which the enthusiasm of the profession, rendered skeptical by past history, but now convinced by unequivocal demonstration, has been slowly and reluctantly enlisted. This last revival, it is safe to predict, will be as much more extensive and permanent than any of its predecessors as its growth has been more gradual and scientific. Thus, after more than a century of experiment and failure, electro-therapeutics is beginning to realize something of the hopes of its early supporters. The tardy fulfilment of the promises of its youth are due not so much to the prejudices of men of science as to the necessary mechanical difficulties in the way of its employment, and to a want of knowledge of the indications for its use and the method of making the applications. The prejudice of which so much has been said was the natural result of the many failures of electricity, and of the fact that, like many other excellent agents, it was for a time almost exclusively in the hands of charlatans.

The history of electro-therapeutics, with its varied alternations of failure and success and its ultimate triumph, may not inaptly be compared with the incoming of the tide upon the shore, where, although each successive wave apparently recedes as far as it advances, the level of the water is ever gradually rising with a force at once sure and irresistible.

OCCLUSION OF BOTH COMMON ILIAC ARTERIES; GANGRENE; DEATH.

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IN offering the following report, no new light is thrown upon the etiology, pathology, or treatment of embolism and resultant thrombosis of the larger vessels; but symmetrical gangrene resulting from embolism of the aorta at the iliac bifurcation is of such infrequent occurrence as to be worthy of notice. Rosenstein[1] says that "clots in one or more large arteries of the lower extremity are fortunately of rare occurrence," and alludes to one case that came under his observation, in which mortification of the whole leg developed. Probably the most frequent point of lodgment of an embolus in the lower extremity is at the bifurcation of the popliteal artery, resulting in dry gangrene of the leg that may extend to within a few inches of the knee. A simultaneous occlusion of the arteries at this point in both limbs is less likely to occur, but is within the bounds of possibility. The following case is one in point:

E. C., forty-eight years old; a female; married, having borne two children; a school-teacher, in moderate circumstances; was admitted to the State Hospital for the Insane, November 20, 1888, suffering from melancholia of about three weeks' duration. There were no known hereditary tendencies, her insanity being attributed to excessive mental work and financial losses.

She was of medium size, fairly proportioned, and somewhat emaciated, with a sallow complexion. Her tongue was coated and her bowels were torpid. The pulse was 84, irregular and intermittent; a mitral regurgitant murmur was heard. There was a history of palpitation and of vertigo. Menstruation had been absent for some time. A history of rheumatism could not be elicited. There was delusional melancholia of a religious type.

As the physical condition improved, the mental condition likewise improved, and at the expiration of four months the woman had so far regained mental health as to be considered convalescent. There remained, however, frequent headaches, accompanied with vertigo, disturbance of digestion, vomiting, diarrhea alternating with constipation, and indefinite subjective symptoms mainly attributable to faulty heart-action. Menstruation was re-established. The patient gained flesh, but remained pale and anemic.

On the morning of April 19, 1889, when called for breakfast, the woman was found helpless upon the floor, having apparently risen as usual to dress. When seen a half-hour subsequently, consciousness was preserved, though the patient was confused and restless, the face flushed and expressive of great

[1] Ziemssen's Encyclopedia of the Practice of Medicine, vol. vi, p. 124.

anxiety. Aphasia was not observed; the tongue was deflected to the right; the pupils were normal; sensibility and motility of the left arm, as compared with the right, were much impaired; the woman was, however, able to execute the coarser movements. There was complete paraplegia; the lower extremities were cold and marked up to the knees by a death-like pallor. The left leg was anesthetic to the level of the knee; the right leg to the foot. The pulse was 60, very weak and irregular. Prostration was decided. Frothing at the mouth and a slight convulsive movement limited to the upper extremity had been observed.

Occlusion of the abdominal aorta at its bifurcation, probably by an embolus, a small embolus also being lodged in the brain, was diagnosticated. Spiritus frumenti and ammonium carbonate were given every two hours until reaction was established; external heat was applied to the lower extremities. By eight o'clock in the evening the woman had rallied from the shock and felt better; she ate a slight dinner; the bowels moved naturally; the urine was dark and heavy from admixture with blood; the right pupil was dilated; the pulse was increased in frequency and tension.

On April 20, power in the upper extremities had been partially regained. The lower extremities assumed a dark, mottled appearance, and remained cold and paralyzed.

On May 3, lines of demarcation appeared to be forming near the middle of the left leg and at the junction of the middle and lower thirds of the right leg, as revealed more particularly by differences of temperature. The distal portion was cold, black, or mottled with pinkish points and blotches, which were somewhat warmer. Above, the limbs were swollen and painful, but the hyperesthesia was more intense in the gangrenous parts, the pain being likened to the "boring of worms," and being much intensified by the weight and warmth of the bedding.

The appetite was poor, the tongue dry and brown, and the pulse 68, small and weak. The dejecta were passed incontinently. Insomnia was marked. Speech was incoherent and delusional.

On May 4, there occurred a sudden extension of the gangrenous process on both limbs to the knees, and on the right posteriorly to the sacral region, where there was a similar process in an area several inches in diameter. Large bullæ formed on the calves and ruptured, discharging bloody serum and leaving excoriated patches. The pulse was 72, weak and intermittent. The patient gradually failed, and died May 20th, four weeks from the beginning of the attack. The days preceding death were marked by moderate elevation of temperature, frequency of pulse, diarrhea, and paralysis of the sphincters.

At the autopsy, twenty-four hours after death, the gangrene was found to extend on the left side to the knee-joint, above which the limb was merely slightly edematous, with engorgement of the superficial vessels. On the right side the gangrenous condition extended along the posterior aspect of the thigh, joining a similar patch about six inches square over the sacrum. The anterior aspect of the thigh was edematous. At the upper inner margin of the right popliteal space there was a large cavity containing several ounces of clear, oily fluid, much resembling olive oil, and offensive in odor, evidently a collection of liquefied fat.

The heart was evidently enlarged by dilatation of the auricles, the walls of which were thinned, and their cavities filled with ante-mortem (terminal) clots. The left auricle was distended with a clot that extended through the pulmonary veins into their smaller divisions in the lungs; within the auricle the center of the clot was broken down into a cheesy mass, offensive in odor, and resembling the contents of a pus-cavity. The right ventricle contained small, adherent clots, entangled in the chordæ tendineæ. The left ventricle was empty and contracted, the heart evidently stopping in systole. The aorta contained a white clot, extending from the valve to beyond the arch. The mitral valve was thickened, the seat of plates and nodules of calcareous matter, and partly bound down; the mitral ring was rigid, and contracted to about one-third its normal diameter, barely admitting the extremity of the little finger, and giving evidence of decided insufficiency and stenosis. The remaining valves and orifices appeared normal. The heart was soft and pale; the walls of the ventricles were apparently unchanged. There was no degeneration of the arteries. Spleen and liver were engorged.

The right kidney was about one-half of the normal size, much nodulated, irregular in contour, and of a dark-gray or slate color. The capsule was moderately adherent. Section revealed numerous old hemorrhagic infarctions; the cortical substance was generally thinned and wanting in the situation of the cicatrices; in several places the base of a pyramid was apparently in immediate contact with capsule. The left kidney, rather larger than the right, presented the same general appearance, though in a minor degree. One pyramid was of a yellowish color, and had evidently undergone fatty degeneration. The abdominal aorta was found to be normal as far as its bifurcation, beyond which the walls of the arteries were black in color, showing advanced gangrene, and their caliber was obliterated by firmly-clotted and partly-organized blood. Beyond the division of the common iliacs the contents of the vessels were firmly organized, the vessels being almost converted into fibrinous cords; on the proximal side of the iliac bifurcation the contents were less highly organized, but yet firmly coagulated. The firmness of the clot was more pronounced in the right common iliac and its branches than in the left. The iliac muscles were dark-colored and evidently becoming gangrenous.

The brain was not examined, for want of permission.

The apparent cause of the occlusion of the arteries in the case reported, based upon the sudden inception, the completeness, the bilateral character, the gangrenous condition of the common iliac arteries, associated with extensive valvular disease, seems to have been the lodgment of some detritus from the

heart at the bifurcation of the abdominal aorta, where by fibrinous accretions the embolus gained sufficient size to suddenly block the main divisions of the aorta, probably at the bifurcation of the common iliacs. The only modifying fact was the fairly well-nourished condition of the anterior surface of each thigh, which would seem to have been improbable were the profunda arteries implicated, the collateral circulation through the internal mammary or other accessory vessels being scarcely sufficient to maintain the requisite blood-supply.

The numerous infarcts of the kidneys would indicate the repeated detachment of cardiac emboli, so that possibly there was a simultaneous lodgment of fragments in the two femorals rather than at the aortic division. The limitation of the gangrene to the legs, as seen in the imperfect attempt at a line of demarcation, the subsequent sudden extension of the process up the thighs, and the gradually increasing degree of organization of the clot from the distal to the proximal extremity of the vessels, would favor this latter conclusion—stasis of the current favoring the formation of a thrombus between the original point of occlusion and the abdominal aorta, the completion of its formation being manifested by the extension of the gangrene.

One source of gangrene of the lower extremity that may extend to within a few inches of the knee, as already stated, is embolism of the popliteal artery at or just above its bifurcation. Another potent cause, as seen in senile gangrene, is slowing of the blood-current as a result of partial obliteration of the lumen of the popliteal arteries by atheromatous degeneration.[1] "The arrest of the circulation, from being partial may suddenly become perfect," in consequence of the formation of a thrombus, and then the gangrene will in a few days reach the knees, subsequently becoming moist. In neither the case reported nor in the following case was there a tendency to obliteration of the main vessels of the pelvis and lower extremity above the primary lesion, and this too, notwithstanding the existence of favoring circumstances. The report of the following case has been kindly furnished by Dr. C. B. Mayberry, in whose wards it occurred:

G. C., a male, seventy-four years old, was admitted to the State Hospital for the Insane November 21, 1889. He was of average height, of slender build, emaciated, and in feeble bodily condition; the pulse was weak and irregular. The respirations were 21; the temperature was 98°. A mitral systolic murmur was heard at the apex of the heart. The tongue was coated; the appetite was impaired; little food was taken in consequence of delusions of acute melancholia.

[1] Ashhurst: International Encyclopedia of Surgery, vol ii, p. 301.

April 17, 1890. Without any change in the general health, gangrene of the left foot developed, which gradually extended up the leg. The foot became cold, dry, and shrivelled, with patches of ulceration and slow sloughing, and with decided constitutional disturbance.

20*th*. The process had gradually extended, and the patient was slowly failing. There was no perceptible pulsation in the arteries of the leg or foot. The pulse was 120; the respirations 25; the evening temperature was 103°. Amputation was considered, but not deemed advisable, owing to the weak condition of the patient. Death took place at 8.45 P.M. on April 25th.

At the post-mortem examination of the foot, dry gangrene was found extending half-way to the knee. The popliteal artery in its upper part was found much diminished in caliber, one side of its wall being much thicker than the other, in consequence of the organization of an old thrombus. The crescentic-shaped lumen gradually became less marked and finally disappeared in the lower part of the artery, thus cutting off all circulation to the leg. An attempt at collateral circulation had been made by enlargement of the arteries about the joint. No further examination was made.

The feeble condition of this patient, the form of mental disorder, and the existence of organic disease of heart, would seem to have been favorable to an extension upward of the thrombotic process, so as to involve at least the entire femoral artery; but in this case, as in others, the gangrene was comparatively limited in extent.

Moore,[1] in describing symmetrical gangrene, says: "It may also be the result of embolism of the aorta at the iliac bifurcation—a cause which can be easily appreciated." If partial gangrene, as he describes it, can be produced by so potent a cause, even more extensive partial gangrene might have been expected to result, as in the case of E. C.; hence it is not unreasonable to refer the initial point of occlusion to the common iliacs.

Embolism of one branch of the abdominal aorta, while infrequent, is probably not so rare as embolism of both branches. The causation and train of symptoms are necessarily the same. The following case is also taken from the male records:

E. J., a male, sixty-three years old, was admitted to the State Hospital for the Insane February 22, 1884. He was tall, slender, much emaciated, and in poor physical health. The pulse was 96, small and regular. The appetite was capricious, owing to delusions respecting food. The man was subject to chronic diarrhea. On admission he was wildly incoherent, noisy, suspicious and afraid of others, sleepless, destructive, and uncleanly in his habits. He presented delusions mainly of a depressed nature, but showing the exaltation of manner usual in mania. In May, 1888, he had a mild attack of

[1] Loc. cit., p. 305.

pneumonia, from which he did not recover for many weeks. During May, 1890, he had a slight attack of facial erysipelas.

About 11 A.M., January 30, 1891, it was noticed that the patient was unable to use the right lower extremity, which was cold, and very soon presented a mottled appearance. Sensibility and motility were lost. The femoral artery was pulseless. Consciousness was preserved, the mental condition being unchanged. The entire limb and lateral half of the scrotum were involved, showing occlusion of the main artery, probably at the division of the abdominal aorta. No change occurred in his condition until 6.30 A.M., January 31st, when he suddenly expired.

There was no history of organic disease of the heart. On the contrary, the man was considered phthisical, no definite information being obtainable on physical examination, owing to the constant excitement under which he labored.

At the autopsy, thirty hours after death, the right pelvic region, the right lateral half of the scrotum, and the entire right thigh presented a dark, mottled appearance.

The right heart was normal; the left was enlarged. The cavities contained ante-mortem clots. The mitral valve was normal. The aortic leaflets were the seat of calcareous plates; the roughening of the surface and the presence of small vegetations afforded evidence of old endocarditis, the pathological condition permitting decided regurgitation and causing some obstruction. Atheromatous degeneration prevailed throughout the arterial system. The lumen of the colon was narrowed in many places, as a result of chronic colitis. The right common iliac artery was entirely closed by a blood-clot of firm consistence. Judging from the character of the occluding body, it was thought that the point of lodgment of the detritus or vegetation from the heart was at the division of the common iliac, where the thrombus that formed attained sufficient size to plug the vessels upon the distal side, and subsequently upon the proximal side as well, thus obliterating the lumen of the artery from its commencement at the aorta, and depriving the entire right half of the pelvis and the right lower extremity of blood. The brain was not examined.

The cause of the rapidly fatal termination may have been heart-failure, due to a sudden increase of resistance in the blood-current thrown upon a badly impaired organ, though the same increase of resistance may have given rise to an apoplexy, a plausible theory in view of the weakened condition of the arterial vessels consequent upon atheromatous degeneration.

Had not this case pursued so rapid a course as a result of a secondary accident, without doubt it would have eventuated in moist gangrene of the entire limb, and have terminated by septic poisoning.

In the cases reported the form of insanity was melancholia, a disease characterized by a weak and sluggish circulation, and which, when associated with grave, organic heart-lesions, or a more frequently occurring degeneration of the coats of the vessels to which the insane are peculiarly liable, presents sufficiently potent factors for the development of the accident.

The frequency of these cases among a comparatively small number is suggestive of a marked predisposition of the insane to embolic occlusion of the arteries, an inference even more patent when we include in the category localized softenings dependent upon embolism of the cerebral vessels.

ACTINOMYCOSIS.

BY WM. P. McGOVERN, M.D.,
OF CBOARBURG, WIS.

THE number of cases of actinomycosis seen and published has increased every year since the appearance of Ponfick's first contribution to the *Berliner klinische Wochenschrift* in 1879, but there has not been much added to our knowledge of its nature, cause, and treatment. The greater number of cases have been reported by German authors, and as late as 1885 W. T. Councilman, in describing this disease, said that no case of its occurence in man had been recorded in the United States. In England the first case of removal of the growth has been reported during the current year. That actinomycosis was met with as frequently previously to 1879 as since, no one will question, and that it occurs as frequently elsewere as in Germany is beyond doubt.

The case related in this paper, and two cases treated by Dr. N. Senn, and fully described in his *Principles of Surgery*, have originated within a radius of thirty miles during the last five years. Dr. J. B. Murphy, of Chicago, has treated five cases of actinomycosis, his first case being the first recognized in man in the United States.

Actinomycosis is a parasitic disease caused by a fungus that was at first classed among the cladothrix variety of algæ, and later was placed among the leptothrix group, and was viewed as a metamorphosed form of the leptothrix buccalis. The fungus is supposed to be found in nature, growing upon certain cereals as barley, rye, and corn; certain it is that a metamorphosis takes place in this fungus after entering the human body. The arthrosporous schizomycetes are noted for pleomorphism, and especially is this true of the cladotricheæ, which, in one and the same life-history, present the forms of cocci, bacteria, bacilli, leptothrix-filaments, spirilla, and vibriones; they may be parasitic to a higher organism and assume new and different forms. Pleomorphism may account for the confusion that seems to exist in regard to this fungus, as to whether

it is a cladothrix, leptothrix, hyphomycete, or some "higher form of bacteria."

The actinomyces-body or spherule is about the size of a millet-seed and usually whitish-yellow in color, and is not found floating in true pus, but in a gruel-like matter which is perfectly odorless, except when contaminated with some extraneous matter. We know nothing of its manner of emigration in the human body, but about its mode of entrance we have the discovery of Israël and Pratzsch of these spherules in the cavities of carious teeth. In my case there was a spherule in the cavity of a carious tooth, and two within an abscess-sac attached to one root.

Actinomycosis has been found in almost every organ and portion of the body, but in the greater number of cases the disease has been located in the neighborhood of the mouth. Carious teeth, lesions of the mucous membranes of the mouth, respiratory tract, and alimentary canal, have allowed this parasite to enter, as also have lesions of the integument, giving rise to a primary actinomycosis of the skin. It has been discovered in the heart, lungs, liver, kidneys, brain, bladder, prostate gland (?), peritoneum, pleura, and spleen—organs and membranes to which it gained entrance through the blood.

The disease is an exquisitely chronic one (at no time is there true systemic infection) characterized by a granulation-tissue proliferation. Unlike the true systemic infectious diseases, tuberculosis and syphilis, the lymphatic glands are not involved, except by simultaneous suppuration induced by the specific excitant bacteria of suppuration.

The prognosis is very unfavorable. When found in certain organs, as the heart, liver, spleen, brain, and kidneys, the disease is considered fatal; but when located on the face or neck, or as a primary actinomycosis of the skin, the prognosis is most favorable.

Up to the present time, and with varying results, the treatment of actinomycosis has been purely surgical. In many of the cases operated upon the disease has recurred on account of failure to remove all of the diseased tissue. The only treatment with drugs—without resorting to operative procedure—is that first used by Dr. Köttnitz[1] in four cases of actinomycosis of the cheek and neck; all four recovered. The drug used was the nitrate of silver stick, and the diseased tissues were cauterized freely and frequently until all traces of the disease had disappeared. The first case in which this treatment was used was one of reappearance after several attempts at removal by operation. When the disease is situated in certain organs of the body in which surgical treatment is not applicable, nitrate of silver would also be inadmissible. The following case will illustrate this method of treatment and its good result.

The patient, J. H., was first seen August 30, 1891. Examination revealed a swelling occupying the angle of the lower jaw on the right side. This swelling, the size of half a lemon, was dense to the touch, gave no fluctuation, and was surrounded by an ill defined mass of infiltrated tissues, extending in all directions, but more particularly downward and backward over the sterno-cleido mastoid muscle. The skin was red over the central portion of the tumor, but there was no tenderness on pressure. The mouth and teeth showed evidence of lack of attention, and the last molar on the right side was carious, but had not ached.

On July 27, 1891, the patient first noticed a bean-like swelling opposite the angle of the jaw. This steadily increased to its present size, without becoming painful, tender on pressure, or giving rise to fever. The patient's condition was good, though he had of late lost considerable in weight. No positive diagnosis being made, expectant treatment was adopted.

On September 7th, a soft spot was found at the center of the tumor. Incision evacuated about one teaspoonful of a gruel-like matter, containing numerous yellowish-white bodies. A diagnosis of actinomycosis was then made, which was soon confirmed by microscopic examination.

The patient was seen daily either by myself or by my associate, Dr. E. R. Moras, and the abscess-like cavity was syringed out, with either a solution of tincture of iodine in alcohol, or a 1 : 1000 solution of bichloride of mercury, or a 5 per cent. solution of carbolic acid, and packed with gauze. I extracted the carious tooth on the 16th. Two actinomyces-bodies were found on one root, and one other was lodged in its cavity.

On September 24th, the cavity in the cheek, and as much of the surrounding indurated tissues as could be reached, were cauterized with the nitrate of silver stick. When the patient returned on the 27th, the change was surprising; the cavity was practically obliterated, and already the induration was markedly less. A mass of spongy granulation-tissue protruded from the wound, and by pressure a slight amount of the characteristic actinomycotic fluid could still be obtained. The cauterizations were repeated every third or fourth day. The improvement was unexpectedly rapid and pronounced. The last application was made on November 8th; on November 15th the patient was discharged cured, only a small scar remaining.

The patient has been seen several times since, and nothing suspicious has as yet developed.

Dr. Köttnitz states that in all of his cases there were defective teeth on the affected side, and all the patients had neglected the proper care of their mouth and teeth. In my case this was also true, and the carious tooth was undoubtedly the avenue through which the parasite gained entrance into the tissues. This fact suggests scrupulous cleanli-

[1] Deutsche med. Wochenschr., September 3, 1891.

ness of the mouth and teeth as the chief prophylactic measure.

A sufficient length of time has not elapsed to say that the disease will not recur, but up to the present time (December 14, 1891) there has been no sign of recurrence. The result obtained from this treatment has been such as to warrant a further trial in cases of actinomycosis in which the disease is situated in portions of the body accessible to cauterization.

"The favorable action of the remedy is probably to be found in a peculiar susceptibility of the actinomyces to the action of certain drug-reagents to which probably the nitrate of silver belongs, or the cauterization gives rise to an active inflammation with all its consequences, which is of importance in fighting this foreign element." (Köttnitz.)

In the case reported there was no sign of active inflammation, except when healthy, non-infiltrated tissues were cauterized; pain was comparatively slight, and the cauterized reticulated granular mass was usually thrown off on the second day after the application. The nitrate of silver seems to have some selective action upon the fungus and the granulation-tissues within which it grows, as the normal tissues were but seldom attacked, even when the caustic was used very freely.

There is no evidence of the transmission of actinomycosis from man to man, or from animal to man; and as the disease is almost always local, the danger of infection from the meat of diseased animals is not very great, and if the precaution of thorough cooking is taken, as in trichina-infected meats, the danger is *nil.*

CLINICAL MEMORANDA.

THE FUNCTION OF THE SEMICIRCULAR CANALS.

By E. D. SPEAR, M.D.,

AURAL SURGEON TO OUT-PATIENT DEPARTMENT BOSTON CITY HOSPITAL, AND TO THE MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY.

HÖGYES[1] believes that the semicircular canals of the ear, with the vestibular branch of the auditory nerve, are a peculiar end-apparatus regulating the movement of the muscles of the eye, and probably of the other muscles of the body, for the maintenance of equilibrium.

In order to put this to a test, and decide whether there is to be found any direct (or indirect) connection between the organs to which I apply the name peripheral space-organ (namely, the semicircular canals of the ear) and the muscles of the eye, I chose certain cases from among my patients who made complaint of dizziness, or whose gait in walking showed disturbances of equilibrium, and asked my friend, Dr. H. B. Chandler, of Boston, to examine their ocular muscles.

The result of our mutual investigations caused us to come to the definite conclusion that in regard to the sixth (abducens) nerve there was a most intimate connection with the vestibular branch of the auditory nerve. All dizzy patients had exophoria of varying degree dependent upon the amount of intensity of the peripheral irritation.

Without entering into the details of the cases examined, or touching upon other important and interesting questions, I transcribe enough data to encourage one to continue these interesting observations, and I suggest for consideration two typical cases recently observed.

First, a strong, able-bodied man, exposed to inclement weather, and, in consequence of repeated wettings, developing a post-nasal hypertrophy of the right turbinated body, presented himself for relief of intense pain in the corresponding ear. He was found to have a severe form of otitis media acuta, with a small perforation of the drum-membrane, and oozing of the serum from the engorged bloodvessels of the tympanum. The patient was in great agony from the pain in the ear and head, was very unsteady in his gait, staggering forward and to the right; he complained of great dizziness, and was at times nauseated. He also appeared to have a complete ophthalmoplegia interna on the right side, due to what at first seemed a paresis of the internus muscle. The demonstration of this state of the ocular muscles needed no prism, because the divergent eye could not be brought to the median line even when its fellow was strongly converged. There was, necessarily, diplopia.

In order that this highly interesting and deeply instructive case might not lose its effect upon its observers—among whom was my colleague and friend, Dr. C. J. Blake, of Boston—I avoided using any means of treatment which might not be clearly understood; and, as the exigency demanded immediate relief for the very severe symptoms, I used the simplest means at hand. A large tampon of absorbent cotton dipped into a 4 per cent. solution of cocaine hydrochlorate was carried deeply into the right nasal fossa. This was allowed to remain in position ten minutes, was then removed, and nothing more was done. At once, upon the removal of the cotton, the patient converged his eyes normally, could walk in a straight line, had complete relief from pain, and from that hour became convalescent.

It appeared clear that we had here a closed Eustachian tube, a middle ear acutely inflamed and filled with fluid pressing upon the oval window, and through it upon the ampullar enlargement of the horizontal semicircular canal. Irritation was thus probably transferred through the vestibular branch of the auditory nerve to the space-center, and through it to the terminal fibers of the sixth nerve, causing a stimulation of the muscle supplied by it, and bringing about the divergence simulating a paresis.

Dr. Myles Standish, an oculist of this city, kindly sent me a patient afflicted with dizziness. He came wearing strong prisms that fully corrected the divergence and removed the double vision, but did not relieve the dizziness or the titubation. I found great swelling of the right turbinated body, a closed Eustachian tube, depressed cicatricial membrana tympani, with fair hearing. These were results of past suppurative inflammation of

[1] Pflüger: Archiv f. Physiologie, Bd. xxvi. The Pathology of Ophthalmoplegia, by W. J. Collins, M.S., M.D., B.Sc. Lond., F.R.C.S. Eng. Amer. Journ. Med. Sci., November, 1891.

the middle ear, with restoration of the normal functions of the ear upon recovery, but not with an entirely normal condition of the parts of the ear concerned in protecting the labyrinth from undue pressure (capsular ligaments and muscles of ossicles). After local treatment of the middle ear and nose, the eye-symptoms improved, and after several applications the patient voluntarily laid aside the prisms because, as he said, they made him see double.

POISONING FROM HOMATROPINE USED IN THE EXAMINATION OF REFRACTION.

BY THOMAS R. PORLEY, M.D.,
SURGEON NEW AMSTERDAM EYE AND EAR HOSPITAL; PROFESSOR OF OPHTHALMOLOGY IN THE NEW YORK POLYCLINIC.

ALTHOUGH the occurrence of toxic symptoms from the frequent use of a strong solution of sulphate of atropine in the eyes has frequently been observed, I am not aware of any such effect having been produced by the use of homatropine. I have, therefore, thought it worth while to report the following case, in which the use of homatropine for the purpose of paralyzing the accommodation was followed by alarming symptoms of poisoning.

A. L., seven years old, was brought to me for examination of her eyes August 26, 1891.

$$V = \frac{20}{XXX} \text{ in both eyes, and with } + 1 \text{ D. } \frac{20}{XX}.$$

The ophthalmoscope, however, showed more H., and a 2 per cent. solution of homatropine was ordered to be put in the eyes every fifteen minutes for an hour, and the child to be brought again the next day. The day following, the drops having been used as directed, the eyes were again examined. The pupils were dilated *ad maximum* and there was complete paralysis of accommodation. H. now = 2 D. $V = \frac{20}{XX}$. A glass of + 2 D. was ordered, and the child directed to return in a week or so later.

The patient was in my office for an hour, but up to that time no effect of the homatropine other than that produced upon the eye was observed. On September 4th the child was again brought to me by her parents, who gave the following account of her behavior soon after leaving my house: On the way home she became very restless and nervous, her face was flushed a deep scarlet, and both the mind and senses were very much affected. Her ideas, which were very rapid and connected at first, became incoherent and extravagant, and she saw many imaginary objects. By the time they had reached their home her gait was staggering, the hallucinations more marked and constant and accompanied by mild delirium. Her parents, now decidedly alarmed, sent for their family physician, who made a diagnosis of belladonna-poisoning, and under the influence of some remedy given by him (probably some preparation of opium) there was an amelioration of the symptoms, with a renewed tendency to delirium and delusions. however, toward night. The following morning she was much better, but all that day was very nervous and displayed a tendency to the return of the hallucinations; and it was several days more before she had entirely recovered her usual health.

The prescription was compounded from Merck's preparation by a very careful and reliable druggist, who has kindly made for me a computation of the amount of homatropine contained in each drop of the solution. From Barnes's standard eye-dropper each drop of the solution equalled $\frac{1}{104}$ grain. From Barnes's standard medicine-dropper each drop equalled $\frac{1}{80}$ grain. The latter was most likely employed, since it is the one commonly in use. If we now take into account the number of instillations made in both eyes during the course of the hour—eight in all—we shall have as a result $\frac{2}{15}$ grain of homatropine contained in the amount of the solution employed.

It would be difficult, if not impossible, to ascertain the amount of the drug absorbed either directly or by the entrance of some of the solution into the throat through the tear-passages.

Whether a 2 per cent. solution is a stronger one than is usually employed I do not know. It is, however, the strength that I commonly use, and this is the first instance in which any disagreeable symptoms have ensued. The experience afforded by this case shows, however, that poisoning may result from the use of homatropine, and should lead to greater caution in its employment. I would suggest as a precautionary measure that in all cases in which a strong solution of homatropine is used, pressure should be made over the lachrymal sac for a few seconds after each instillation in the eye, to prevent the solution entering the throat by this channel.

MULTIPLE SARCOMA.

BY S. D. SWOPE, M.D.,
OF MARION, KY.

ON February 1st, I was consulted by S. P., a colored girl nineteen years of age, unmarried, living in the country in a healthy locality. She is the mother of one child six months old, which, to all appearances, is in good health. Her parents were healthy, had reared a large family, and there was no history of syphilis, tuberculosis, or carcinoma in the family. The patient was of medium height, well nourished, and intelligent. At the time of her first visit she was suffering from a tumor, about the size of a walnut, hard and tense, irregular or nodulated in form, with slight diminution of pigmentation over its surface, located on the ulnar border of the palmar surface of the left hand over the abductor minimi digiti. It was supposed to be caused by rubbing on the washboard. The tumor had first been noticed two weeks previously, attention having been first attracted to it by pain; since that time it has grown to its present size. I suspected sarcoma, but from the age of the patient and the history I thought I might possibly have to do with some deep-seated inflammation, and directed the application of warm fomentations and an early report to me. There was at this time no enlargement of the glands of the arm or of the axilla.

Ten days later I saw the patient again, and found the tumor much enlarged, about the size of a hen's egg, tense, hard, nodulated, and very painful. There was still no enlargement of the axillary glands. The patient had an anxious expression, and had lost much flesh. The temperature was normal; there was inability to sleep on account of the pain, which was constant and

gnawing. I gave morphine to insure rest, and advised immediate amputation of the hand, or as much of the same as I deemed necessary after examination under chloroform. Operation was refused. Eight days later I was allowed to operate, the pain having become almost unbearable, even under large doses of morphine. The axillary glands were not enlarged at this time. With the assistance of two medical friends the patient was anesthetized, when, on examination, the disease was found to have extended to such an extent that an attempt to save any part of the hand was deemed inadvisable. After applying an Esmarch bandage, the tumor was incised, and was found to be composed of an aggregation of nodules, with broken-down tissue disseminated throughout, the disease penetrating to deeper muscles and fascia. The arm was amputated at the junction of the middle and lower thirds of the forearm. The patient reacted nicely, and did unusually well until the ninth day, at which time she was sitting up, free from pain in the stump, with good appetite; but she complained of pain in the left intercostal region. There was no cough, but the pain was increased by deep inspirations. Ten days later (nineteen days after the amputation) I removed all dressings from the stump, found it completely healed, and apparently healthy in condition, the boric acid dusted on after amputation coming away dry, and the catgut ligatures and sutures having been absorbed. The patient now complained very much of pain in the chest, the axillary glands were enlarged, but there was no evidence of tumors about the chest.

Death occurred on May 1st, great dyspnea having existed during the last two weeks of life. The body, viewed post-mortem, was much emaciated. Three axillary tumors, as large as walnuts, were found, and some twenty five or thirty nodules were seated over the chest, ranging in size from that of a walnut to the smallest. They were hard and tense, and attached to the skin. A tumor as large as a filbert had sprung up on the ulnar side of the stump. No further dissection was allowed, and no microscopic examination was made.

I was especially impressed with two features of this case: the age of the patient, and the rapidity of the recurrence of the disease after amputation of the limb.

VOLVULUS FROM VIOLENT EXERCISE; LAPAROTOMY; DEATH.

BY E. V. PENNINGTON, M.D.,
OF WHITESBURG, TENN.

MISS M., eighteen years old, was seized with severe abdominal pain at three o'clock in the morning of April 9, 1891, after having turned somersaults upon a bed in the yard the previous evening. The usual means failed to relieve the pain; nor did purgatives succeed in overcoming the obstinate constipation that existed. The stomach was non-retentive. Mechanical obstruction of the bowel, dependent upon intussusception, was suspected. Ordinary treatment not availing, I was consulted for a surgical opinion. The abdomen had become tympanitic, and was sensitive to manipulation. An anesthetic was administered, and, after careful examination, I concluded that we had to deal with an intestinal twist located near the ileo-cecal valve. I placed the patient in the most favorable position and used copious injections of warm water *per rectum*, conjoined with manipulation, but without affording relief. I then stated that surgical interference was necessary. Upon consultation with the attending physicians, however, it was agreed to defer the operation for thirty-six hours.

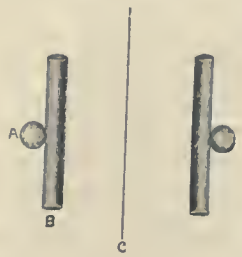
The condition of the patient not improving, the operation was finally undertaken. Dr. S. L. Pennington, Dr. King, and others assisted. An incision about four and a half inches in length was made through the linea alba. After tracing a considerable portion of the small intestine, I found the seat of trouble located in its lower portion, which was twisted upon itself, totally obliterating the lumen of the alimentary tube. Hard masses of feces were lodged against the obstruction. I corrected the trouble, washed out the abdominal cavity with an antiseptic solution, provided for drainage, and closed the wound. The patient was so weak before the operation that we feared heart-failure. By great care, however, the operation was brought to a successful termination. Eight hours later the heart began to fail, and in spite of all stimulation death took place.

The lesson of this case is the unwisdom of operative delay when urgent symptoms exist. My regret is that we did not operate while the patient had strength to bear the operation.

DESCRIPTION OF A NEW SUTURE.

BY ALEXANDER FULTON, M.D.,
OF PHILADELPHIA.

ROUND pieces of amber, about one-sixth of an inch in diameter, of various lengths, are used, perforated as required. Lead, glass, or any material that can be kept thoroughly aseptic may be used. Fine wire (silver preferred), after immersion in carbolized water, is run through the lips of the wound about half an inch from the edge when deep suture is desired, and one-third of an inch when more superficial suture is wanted. It is then put through the bar and clamped with a perforated shot. The line C represents the approximated lips of



the wound. The lips of the wound are thus by traction brought in perfect apposition. This method is especially adapted for wounds of the forehead, where there is so much tension. It always gives a neat result. I have seen every other form of suture cut through and leave the wound gaping. Sometimes the twisted suture so strangulates the tissues as to cause the part to slough off and leave an ugly scar.

Cremation.—The Japanese, who, in imitation of European nations, recently adopted the custom of burying, have returned to their original custom of burning the dead.

MEDICAL PROGRESS.

Successful Resection of Gangrenous Bowel for Incarcerated Inguinal Hernia.—STERN (*Berliner klin. Wochenschr.*, No. 41, p. 1011) has recorded the case of a woman, sixty years old, who came under observation after having presented, for a week, symptoms of intestinal obstruction, dependent upon an incarcerated inguinal hernia. An incision over the most prominent portion of the swelling in the right inguinal region confirmed the diagnosis and revealed the existence of peri-hernial suppuration. The incarcerated bowel was found gangrenous and perforated. Most careful antiseptic precautions being observed, the incarceration was relieved. The healthy intestine, on either side of the gangrenous area, was firmly grasped by an assistant and a section of bowel, about two inches long, was removed. The free margins of the remaining intestine were approximated by means of Lembert sutures, the first suture being applied at the point furthest from the mesentery, the distance being progressively halved with each succeeding suture. After satisfactory approximation, the wound was closed and dressed. The subsequent course of the case was surprisingly uncomplicated. Twenty-five days after the operation the patient was able to resume her household duties.

Ingravescent Cerebral Thrombosis and Hemorrhage during Pregnancy and Parturition.—HORROCKS (*Transactions of the Obstetrical Society of London*, 1891, xxxiii, 3, p. 201) has recorded the case of a deutipara, twenty-eight years old, who in the last month of pregnancy developed drowsiness, with rectal and vesical incontinence. The pupils were equal. There were no evidences of palsy. The urine contained neither albumin nor sugar. The heart-sounds were normal. The woman was delivered of a living child, but consciousness remained obscured. She constantly moved the right arm and leg, but the left leg was motionless and flaccid; the left arm was slightly moved. The knee-jerks were preserved and equal. The left pupil became larger than the right, though both were small. There was no apparent disturbance of respiration. After death, the veins of Galen, the right temporo-sphenoidal vein, and other cerebral veins were found occluded by thrombi. In the posterior portion of the right optic thalamus was a recent extravasation of blood, extending anteriorly to the internal capsule. A smaller extravasation occupied a corresponding situation upon the opposite side. In addition, there existed cystitis and right-sided suppurative nephritis. Heart and uterus were normal.

Catheterization of the Biliary Ducts.—In a communication to the Société de Chirurgie, FONTAN (*Revue de Chirurgie*, 1891, No. 12, p. 1122) has reported a case in which the biliary passages were compressed by an abdominal neoplasm, with the development of cholemia. Relief was afforded by cholecystotomy, followed by repeated catheterization. In a second case, in a woman with cholelithiasis, the obstruction to the flow of bile was relieved by cholecystotomy, followed by catheterization and lithotripsy. From his studies upon the cadaver and the living, Fontan concludes that catheterization of the biliary passages is an indispensable adjuvant to cholecystotomy. The maneuver may be exploratory or therapeutic. It may be necessary to dilate a stricture. The procedure, difficult when the biliary passages are normal, is easily carried out when there has been retention of bile. The operation adds no dangers.

Aspergillus-mycosis of the Antrum of Highmore.—ZARNIKO (*Deutsche med. Wochenschr.*, No. 44, 1891, p. 1222) has reported the case of a woman, fifty years old, who complained of a sense of nasal obstruction and discomfort, of an offensive odor of the nasal secretions, of a feeling of occlusion of the left ear, and of frontal headache. On rhinoscopic examination, polypoid hypertrophy of both middle turbinated bones was detected. After removal of the excess of tissue it was found easy to introduce a sound into the antrum of Highmore of the left superior maxillary bone. Irrigation of the sinus brought away a moderate quantity of detritus, which, upon microscopic examination, was found to contain mycelia and spores of the aspergillus fumigatus. A continuance of the treatment afforded ultimate relief to the patient.

For Snake-bites.—As the result of a careful review of the subject, HOFFMANN (*Deutsche medizin. Zeitung*, No. 72, 1891) recommends the following mode of procedure in case of snake-bites. In recent cases, a deep crucial incision should be made and the wound washed with a five per cent. solution of carbolic acid or potassium permanganate. A white-hot iron should be applied to the floor of the wound. A ligature should be applied for from four to six hours between the bitten point and the heart. Stimulants (ether, camphor, ammonia, alcohol) should be administered to counteract the paralytic effects of the bite. Antiseptics: five per cent. solutions of carbolic acid, one-tenth per cent. solutions of mercuric chloride, are to be employed to prevent putrefaction and septic infection. The general condition must be supported.

Reaction from an Aqueous Extract Obtained from Bacteria—ROEMER (*Wiener klin. Wochenschr.*, No. 45, 1891, p. 835) has recorded a series of experiments made with an aqueous extract obtained from cultures of the pneumonia-bacillus and the bacillus pyocyaneus. Three guinea-pigs inoculated six weeks previously with the fluid obtained from tuberculous lymph-glands died shortly after having received injections of the extract. The injections were in each case followed by elevation of temperature. Post-mortem examination disclosed, in addition to the evidences of tuberculosis, enlargement of the lymphatic glands, serous effusions, and injection of and hemorahage in various viscera. Injections in three healthy animals were followed only by elevation of temperature.

Bilateral Tubal Pregnancy.—At a meeting of German naturalists and physicians BOILEAUX (*Münchener medicin. Wochensch.*, No. 45, 1891, p. 801), relates the case of a young woman in which he removed the left oviduct, containing a two months' fetus. The patient recovered and three months later presented a right-sided tubal pregnancy. A second operation was also successfully performed.

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SATURDAY, JANUARY 23, 1892.

MEDICAL ASPECTS OF LIFE INSURANCE.

EVERY thoroughgoing Darwinian, SPENCER chief among all, is never weary of pointing out that modern civilization and sentimentalism works to the survival of the unfit, thus contradicting the plain trend of the ordinary laws of biological evolution. Devolution is in this way set against evolution, and instead of progressively strengthening and hardening the race, there are subtle forces sapping the vitality and rendering the more luxurious or civilized unfit for competition with the sturdier and biogenetically more obedient races. The great growth of civilized luxury is thus working to produce an ever-increasing army of social parasites, who, without aim or ability, live but to enjoy themselves, and make a miserable failure even of that. Indiscriminate charity, say the evolutionists, complicates the problem and exaggerates the natural supply of hangers-on, while the weak, the stunted, the diseased, the defectives of a thousand types, are nursed and coddled by protection and kindness to propagate their like, and thus handicap both the present and the future in the struggle for existence that is said to underlie all genuine elevation or even persistence of stock. Looked at from this standpoint exclusively, it has been contended that medicine itself is guilty of sustaining those in half-life, who, having received their death-sentence, postpone the execution, useless retainers, pensioners, and camp-followers of the much-enduring hard-pressed army of civilization. It has indeed been contended that had KOCH succeeded instead of failing to find an effective tuberculocide, he would thereby have done the world the greatest conceivable injury in licensing the weak-lunged, narrow-chested, deoxygenated failures to become the breeders of the coming race.

Now, however false and one-sided these views may be, and false and exaggerated we believe them, it is still always advisable to "heed the other opinion," know it, estimate it at its proper value, and meet it with logic and valor. We may shudder at the awful chasm such an unmoral and brutal lifting of the clouds discloses at our feet, but if the deep is there, the shudder itself renders us less steady of foot, and less possessed of aplomb. Happily, the confutation of this view is easy. If none other existed, the fact is patent that the workman's children are better breeders than those of the nabob. Parasitism begets in men debauchery and physiological degradation; in women, weakness, hysteria, and general good-for-nothingness. The children of the rich are "poor risks."

This, however, is but a too long preamble of a thought as to life insurance and the *rôle* that it is coming to play in our modern life. Is it, like luxury and vice, one of the great powers reversing the law of evolution and working to race-deterioration?

There can be no discussion as to the fact that hygiene, sanitation, increased comfort, and medical science have contributed to a lengthening of the average human life. But the life-insurance rates of premium continue so high that despite palatial offices, opera-bouffe salaries, and all that, it becomes a puzzle to presidents and boards what to do with the enormous surpluses constantly increasing.

Again, medical science has grown so shrewd that coming death may be long foreseen. Doubtful risks are refused, and thus the insured are those most certain of long life. Risk is thus reduced to a minimum and the surplus naturally grows.

The crux of the argument is reached when from the foregoing premises it is logically seen that with high premiums only the well-to-do and the long-to-live *can* insure. The poor—those on sentimental or religious grounds most needing insurance—*cannot*

afford insurance, and the unhealthy, or those of suspicious heredity or occupation—precisely those again that, from sympathetic or ethical reasons, should be most and best insured—cannot pass the examinations. Those children of the deceased parents who were rich enough and healthy enough to insure, are left with a competence that gives them a solid *locus standi* on the globe, and permits them again and always to multiply; whilst the poor workman and the "poor risk" who had neither the money nor the body to secure insurance for *their* children, early leave them sadly and doubly handicapped in the race of life.

Such undoubtedly *has been* the influence in the past. Need it, or will it be so in the future? Proofs are beginning to multiply that an entire change of front and of policy is, or is to be, undertaken. Some form of socialism is "in the air," fated to come. The life of the community is above that of the individual.

Already several counteracting forces are at work:

1. The shame and crime of dishonest "graveyard," infant, and "get-rich-quick" insurance (or *ass*urance) companies cannot blind the discerning to the fact that mutual and assessment companies, if properly watched and controlled, can give, and do give, trustworthy insurance at one-half or one-fourth the rates of the old companies. If, as need not happen, the company stops to-morrow, there is no exodus to Canada, and it has given value received up to date. There seems no reason why a precise amount of insurance should not be bought for a definite time, exactly as one buys so much coffee, house-rent, or a time-loan. And further, why should not the premium be dependent upon or in proportion to the medically-estimated probability of life for each case? At present it is either sheep or goats—two classes alone—but just as we all are a little wicked and a little good, so our chances of approaching death are of all degrees, and ratable in proportion.

2. Many companies are so transforming their business that it is becoming that of a savings-fund or investment company, the death-element an excluded, minor, or inconsiderable one.

3. Many companies that will not break the rule, wink at or whisper to their medical examiners to use not a little discretion. Albuminuria is becoming quite "physiological;" a little cardiac hypertrophy, a slight mitral murmur, a defective hereditary history, etc., are ignored. The printed rules stand, but the personal equation is given much play.

4. Companies are forming to insure those excluded by the rigid medical examiners of the billion-surplus companies, *i. e.*, accepting more doubtful risks, whilst yet other associations are forming to insure whoever will without any medical examination whatever.

5. Governmental insurance and systematic generalized pensioning is either under way or preparing to hoist anchor.

These and many more considerations that might be adduced, go to prove that "the bars are being let down." It is felt that, taken as a nation, our people are paying for their partial and unjustly classified insurance an excessive rate, and receiving therefor an insurance that discriminates unjustly between the classes and the masses. Individualism in insurance must have limits, and the common-health as well as the commonwealth, has its significance, duties, and demands. The tendency to socialistic legislation, the generalization, the extension of the pensioning system by corporations and by government, government insurance itself—all these and more, point to the fact that the health and death of every member of the community is of interest to every other member. Disease, if not self-interest, binds us all together and makes our own well-being depend upon that of every other. Preposterous as it may seem, the rates of premium are higher for the healthy and rich because the poor and unhealthy are excluded. A strange fact is coming to light: one of the richest of New York insurance companies, one that takes the most doubtful and dangerous risks, has one of the lowest death-rates. The life companies will soon learn that popularizing, broadening, and generalizing, making less stringent their medical examinations, will not only cheapen the premium, but strengthen the company and multiply its power for good.

Thus, sooner or later, one sees the medical aspect of a study, whatever it may be, comes uppermost. There seems no doubt of the ability of companies to lower the premium, or to lessen the rigidity of the medical examination, or to do both combined. As a skilled and directing chief officer of these great powers of modern society, the medical examiner for life insurance companies should use his encouraging influence toward extending to those less equipped with health or money, the beneficent action of the communal helping-hand in time of sickness and death.

PROGRESS IN PENOLOGY.

WE trust that every reader of THE NEWS will get and read the little volume, *Papers on Penology*, Second Series (and also the *Sixteenth Year-book*), issued by the New York State Reformatory at Elmira. We believe it may be had for the asking. It contains papers on the "Prisons of Great Britain," "Modern Prison Science," "The Philosophy of Crime and Punishment," "Criminal Anthropology," "New York's Prison Laws," "Prison Labor Systems," and "The Elmira Reformatory of To-day." It is to the last-named article that we especially direct attention. With just and noble pride the editor shows the advances made since the establishment of the institution in 1876, and how to-day it is a great compulsory educational establishment for improvable felons, in which, at the present time, some 1500 persons are undergoing a systematic process of redintegration and preparation for again becoming ordinary citizens. The indeterminate sentence is a basic principle. Likening, *not* identifying, crime and disease, it is held that the criminal should be kept under educational control until convalescent—that is, until morally, intellectually, and physically capable of earning a livelihood, and of maintaining a disposition consonant with the customs and necessities of society. The Reformatory prescription homologizes with the famous three R's, except that here it is the three M's that are required—Mental, Moral and Manual training. In 1890 the percentage of probable reformations was placed at 82.2, or 2147 of the 2611 paroled since 1876. The paroled are sent to the care of an agent of the Reformatory in the city or town in which they have secured employment, and he unobtrusively observes their behavior and mode of life for six months, and indorses their monthly reports to the general superintendent of the institution. If their conduct has been examplary during this time their absolute release from State service is authorized. The trade learned in the Reformatory assures them employment when on parole or discharged. In 32 distinct trades 953 men are now receiving instruction. Nearly 70 per cent. of those admitted were wholly illiterate.

Physicians will be most interested in the report concerning the systematic physical culture of dullards and weaklings—youths not idiotic, but too dull to take up work in the technological departments or to keep pace with the classes in school-study. To reclaim this class has been one of the severest tasks of the managers. The remarkable success following physical drill and exercise, massage, etc , led to an extension of the system to others, and to the establishment of a gymnasium. From March, 1890, to October 1, 1891, there were 212 under the peculiar gymnastic treatment. Of this number only 13 did not chew or smoke tobacco, and only 25 had not been addicted to alcoholic drink. One-fourth acknowledged themselves victims of venereal disease. The causes most frequently assigned for their selection for the physical culture classes were general debility, anemia, myalgia, physical degeneration, masturbation, scrofula, etc.

The outrageous Prison Bill of 1888 interdicted all machine labor for revenue, and how this apparent curse was turned into a blessing by the inauguration of military drill forms a pleasing episode, and, as in the case of the physical culture classes, an instructive example of the power of physical training to educe mental and moral results of the utmost good.

CONSANGUINEOUS MARRIAGES.

THERE is popularly a very widespread, and in its results, beneficial prejudice against the marriage of "blood relations;" but late researches tend to prove that this prejudice, though practically of good effect, is not based upon scientifically correct observation and reasons. Consanguineous marriages do not, as commonly supposed, tend to produce insanity and idiocy in the children, but according to the simple law of cause and effect they tend to intensify the qualities, healthy or diseased, good or bad, of the parents. If the two parent stocks have an inherited tendency to insanity, the offspring will have that tendency doubled. If the consanguineous parents are both tuberculous the children will have precisely the same, but no greater, probability of being tuberculous than if the parents had not been related. But if the consanguineous parents are without pathological taint, and both possess exceptionally desirable or peculiar characteristics, the offspring will inherit the exceptionally pure and strong type intensified and perfected. Stock-raisers take advantage of this law, and by in-and-in breeding they quickly bring a herd to surprising perfection in a short space of time.

But the danger of in-and-in breeding in human beings is that the pure, healthy stocks are hard to

find. We are less "normal" than our animals. Almost every family has some pathologic skeleton in the closet that cross-breeding keeps just below the threshold of observation, but which doubled with another and (in the same family) generally identical or similar abnormalism, at once appears exaggerated in the child, to work decay and ruin. The Persian and Egyptian kings habitually married their own sisters, and even their own daughters, without disadvantage to their offspring. Such instances and the success of cattle-raisers show us that the condemnation of marriage between relatives rests upon the fact of the impurity and generally pathologic condition of civilized man, and not upon any essential biologic law. In itself the blood-relationship is innocent, and under different conditions might even be utilized to elevate the quality of offspring and of the race. It is a sort of negative safety we secure by "cross-fertilization," that shows how near the danger-line humanity is running in its civilized race-degeneration.

Another, and a somewhat unexpected result of the scientific study of this subject has lately been made clear by the studies of two French investigators. They chose a commune of fisher-folk in which, from interesting conditions, there had been highly exceptional social segregation, and in which for two hundred years there had been constant intermarriage of cousins and the descendants of cousins. Of two hundred and sixty marriages occurring in five years, sixty-three were consanguineous. A study of the results of these marriages confirms the previous negative conclusions of other observers as to insanity, idiocy, physical defects, etc. But the new fact clearly established is the decided tendency of these marriages to prove sterile, though this defect did not seem to be transmitted to the children of the consanguineous parents.

It should be noted, however, that the people among whom these studies were made were seafaring, hardy folk, living under circumstances of simplicity and healthfulness, contrasting very sharply with the influences and habits of urban or more "civilized" people.

OBITUARY.

Henry I. Bowditch.—Surrounded by everything that should accompany old age, another veteran has passed from our ranks, and it becomes our duty to pay a tribute to his memory. Dr. Bowditch belonged to a remarkable group of American students that, between the years 1830 and 1840, returned from Paris laden with the new knowledge of physical diagnosis and enthusiastic followers of the numerical method as expounded by their master, Louis. Among them were Gerhard, of Philadelphia, *facile princeps* of American investigators in diseases of the chest; James Jackson, Jr., a young Lycidas, who died ere his prime; Power, of Baltimore, cut off in the fulness of his work; and there remain with us, happily, Oliver Wendell Holmes, the elder Shattuck, and Alfred Stillé. Truly a notable group of men! Dr. Bowditch's early work consisted in the introduction, through translations, of Louis's important works to the profession, and in the popularizing by a little work the methods of stethoscopy. He very early became interested in chest-diseases, and was associated with Dr. Morrill Wyman in the introduction of aspiration. To appreciate his position on this question in the year 1852 let anyone turn to *The American Journal of the Medical Sciences* of that date, and he will find our present ideas there expressed, many years before Dieulafoy's invention, and even prior to Trousseau's strong advocacy of paracentesis in pleural effusion. Unquestionably this is the work by which he is perhaps best, and will be longest known. All of his contributions to the subject of pleurisy, including his latest study of its relation to tuberculosis, bear the mark of the thoughtful, progressive mind. The question of the connection between soil and phthisis engaged his attention for many years, and he was a pioneer in advancing sound views with reference to the climatic and fresh-air treatment of tuberculosis. Sanitary problems occupied many of the later years of his life, and he rendered most efficient service as member of the National Board of Health. Personally, Dr. Bowditch had the charm of manner that so often accompanies an impulsive, generous nature. Even his faults were lovable, but his most characteristic trait was a boyish enthusiasm perfectly delightful to see as he advanced in years. There was, however, a sterner side to his nature, and the wrongs of the Nation and of the race found in him an implacable enemy. The New England spirit never dwelt in a more congenial frame, and in the great struggle of the Nation he was an enthusiastic abolitionist and a devoted supporter of the Union. Rarely has the profession of this country had a more representative member—high-minded, generous, and outspoken—than Henry I. Bowditch, whose name will long be cherished by those who regard such lives as the very leaven of the life we live.

SELECTIONS.

WANTED—A CURE.

The influenza is once more in the air, wafted hither and thither throughout the habitable globe, a formidable, disabling, and fatal pandemic. Once more we are urgently asked on all sides, "Have we a specific? Can we offer a cure?" It is the old delusion and the everlasting and unreasoning, but excusable, impatience for the miraculous and the impossible. "Disease comes by Providence and goes by medicine;" that is a durable and popular formula. Of specifics for sale there are, of

course, a legion. To sell them is the business of the quacks; the Matteis, the Holloways, the Morrisons abound in specifics. There are a dozen available for cholera, for typhoid, for smallpox, for hydrophobia, for carcinoma—all equally plausible and equally useless except for commerce—and why not for influenza? But is there a specific for any disease? It is more than doubtful. The more we know of the nature and cause of disease, of its origin and life-history, the less we are inclined even to expect the discovery of specifics. Disease we know not as an entity, an enemy to be struck down with a club, or to be expelled by a drug, but as a process, the change of tissues and of fluids, the growth of a microbe, the proliferation of a cell, the secretion of a virus. We can modify the processes, we can lessen their virulent products, we can fortify against their worst effects; we can aid the evolution and perhaps guide it to health; sometimes we can arrest it; and often we can anticipate it. Thus we know how to ward off many diseases. Cholera, typhoid, smallpox, hydrophobia are enemies whom we can meet at the gate and forbid their approach. Deaths from either of these preventable diseases are, for the most part, violent deaths, inflicted by the ignorance of the people, the neglect of the sanitary authorities. *Populus vult mori.* In their search for specifics they parley with the enemy and lose their lives. Of influenza we know less than of most other infections; it is aërial, communicable from person to person, and along the lines of travel. For it, as for scarlet fever, we have only isolation as a preventive and palliatives as a treatment. Perhaps one day we shall know more; but there does not seem any likelihood of the discovery of a specific, and judging from numerous analogies it is far from certain that there is in this any ground for reproach. At any rate it comes badly from a public and from a generation which is content to leave Great Britain without even one Institute of Preventive Medicine, and which is left to an appeal for funds from a Lister and a Roscoe to found such an institute—in which lies a chief hope for further life-saving and the advance of preventive and curative knowledge—while millions are lavished on weapons of destruction, or the more obvious means of charitable relief to physical suffering; and finally on the purchase of fraudulent "specifics."—*British Medical Journal*, January 2, 1892.

THE MEDICAL GUILD.

"WHAT, then, are the remedies for these evils which stare the doctor in the face at the very threshold of his career, and embitter his life at a time when it should be radiant with promise?

"1. The limitation of the number of new doctors by the only legitimate measure—the rigid examination of all applicants for practice. Men may be allowed to obtain diplomas in this free country *ad libitum*. Colleges may multiply and send out their hordes of full-fledged doctors. But the medical profession must, for its own interests, but more even for the interest of the gullible public, continue to labor for State examinations. These will, if properly conducted upon some general plan, weed out not only incompetent practitioners, whose numbers, alas! are only too large, but they will also weed out incompetent colleges by holding the latter up to just reprobation in the exhibits of the rating of their students.

"2. The course of instruction in our colleges should be, and as a corollary of the first would be, made more thorough. The exaction of a preliminary education, too, would aid in lengthening the time necessary for the entrance into practice. Thus the over-supply of doctors would be decidedly inhibited, and this would inure not only to the good of the profession but also to the general good.

"A better *entente* should exist among the members of the profession. We should imitate the trades-unions, who pass general laws for the protection of their members, and who adhere to them to the bitter end. Worthy, struggling practitioners should be helped, just as the worthy mechanic is helped, out of a common fund, if his necessities arise, as they often do, from his strict adherence to the rules of the medical guild."—From an editorial in the *Dietetic and Hygienic Gazette*, Jan., 1892.

RAILWAY ACCIDENTS.

FROM the advance copy of the *Third Annual Report on the Statistics of Railways* for the year ending June, 1890, we glean the following interesting facts:

The total number of persons reported by railways as killed during the year was 6,334, and the total number reported as injured was 29,025. Of the total number killed 2451 were employés, 286 passengers, and 3597 were classed as "other persons." In this latter figure are included the large number of suicides. Of the total number injured 22,394 were employés, 2425 passengers, besides 4206 unclassified. If the number of employés killed be assigned to the total number, it appears that one death occurs for every 306 men employed on the railways, and one injury occurs for every 33 men employed. The largest number of casualties occur to men engaged directly in handling trains. Thus, while trainmen represent but 20 per cent. of the total number of employés, the casualties sustained by them account for 58 per cent. of total casualties. A passenger riding continuously at the rate of 30 miles an hour might expect immunity from death by railway accident for 158 years; but an engineer, a brakeman, or a conductor, under the same conditions, is liable to a fatal accident at the expiration of 35 years. The most common accident to which railway employés are liable results from coupling and uncoupling cars. The total number of casualties that can be traced to this source are 7842, of which 369 were fatal. Of this number trainmen sustained 6073 accidents, of which 265 were fatal. The most fatal accidents, however, result from falling from trains or engines, the total number of deaths assignable to this cause being 561, of a total of 2924 casualties. Of this number trainmen sustained 456 deaths and 1838 injuries. Railway travel is found to be the least safe in the States south of the Potomac and Ohio rivers, Groups IV and V. Thus, in this territory, 1 employé is killed for each 241 men employed, and 1 trainman is killed for each 65 men employed. One passenger is killed for each 838,555 passengers carried. In the States lying east of Illinois and north of the Ohio and Potomac rivers, that is, Groups I, II, and III, 1 employé is killed for each 290 men employed, and 1 trainman for each 107 men employed;

1 passenger is killed for each 2,519,851 passengers carried. The statistics of the Western territory show that railway employment and travel is slightly safer than in the Southern States.

THE CARDINAL TRUTH OF CLIMATE-THERAPY.

"THE one great truth stands ever before the eye of the modern surgeon—cleanliness; absolute, scrupulous cleanliness leads to success. Change of climate for consumptives is extremely valuable, but it involves many disadvantages which are far more fatal to its success than the abuse of antiseptics is in wound-treatment, and yet we continue to send patients away from comfortable homes to uncomfortable hotels and boarding-houses, or incomplete sanitaria, where many disadvantages in diet and probable indiscretions in exercise neutralize the most valuable element of all appropriate climates—pure air. It will be a glorious day for medicine when the physician will recognize that the *constant exposure of the phthisical patient to pure air* is the cardinal truth of climate-therapy, as cleanliness is now recognized by the surgeon in wound-treatment."—DR. SIMON BARUCH in the *Dietetic and Hygienic Gazette*, January, 1892.

CORRESPONDENCE.

CHICAGO.

U. S. Medical Secretary of Public Health—Hospital for Contagious Diseases—The Charity Ball—Medical Staff of Cook County Hospital—Springfield Capital District Medical Society—Preparations for an Exhibit of the Status of Sanitation in 1893.

REGARDING the work of the committee appointed at the last meeting of the American Medical Association to memorialize Congress to create a cabinet officer to be known as the Medical Secretary of Public Health, the daily press of this city is highly in favor of the establishment of such a department at Washington. It has shown that international sanitation will be an easy outgrowth of the perfection of sanitary precautions at home. The United States has a natural right to be considered a leader in all matters pertaining to the public health. As the recipient, also, of a perennial stream of immigration from foreign countries, this nation is entitled to considerable latitude in impressing on other governments its views on sanitary matters. The creation of a department of public health would have the dual advantages of increased protection at home and the diffusion of sanitary education abroad.

The new County Board has taken its first actual step toward the erection of a hospital for contagious diseases. A resolution was introduced at a recent meeting directing the county architect to prepare plans for a structure suitable for this purpose, to be built on the grounds of the County Hospital at a cost not exceeding $50,000. The resolution was adopted. It cannot be said that the Board has acted with undue precipitancy. Considering the state of public feeling, as it has been expressed in the press and at large, enthusiastic, and even vociferous mass meetings of the people, it may even seem to not a few persons that the Board has been more deliberate than the circumstances required. These persons believe that, whatever else be done or left undone, a hospital for contagious diseases must be provided forthwith, if only to avert a distressing and calamitous scandal.

From $21,000 to $25,000 were cleared by the recent Charity Ball, as against less than $20,000 netted by that of last year. St. Luke's Hospital is to have one-third. St. Luke's, founded twenty-six years ago, is, as it ought to be, one of Chicago's pet charities. Another third will go to the Women's and Children's Hospital, also founded in 1865, and the rest of the money will be divided equally between the Visiting Nurses' Association, the charity work of the World's Fair, and the Margaret Etter Crèche, which takes care of small children while their mothers are out at work.

The Public Service Committee recently selected the medical staff of the Cook County Hospital. By a former resolution the staff was made to consist of thirty-six physicians, divided among the schools as follows: Regulars, twenty-three, homeopathic six, and eclectic five. All were selected with the exception of the members to represent the homeopathic school. In regard to this a letter was received from the Homeopathic Society, requesting that eight physicians named in the letter be elected to represent that school. As six only are allowed, the society was informed that they would be allowed to name them. Several of the old staff secured reëlection. The majority, however, are new men. The committee started out by allowing each commissioner to name a man. The fifteen regular physicians chosen in this way were: Drs. J. B. Herrick, A. Babcock, J. Boas, P. J. Rowan, J. Price, J. J. Bouffler, D. D. Owsley, C. W. Johnson, G. L. Morganthau, E. W. Lee, J. Frank, J. O. Hobbs, C. W. Earle, J. B. Murphy, and Denslow Lewis. Physicians were then placed in nomination, and eight of them selected by ballot. They were: Drs. J. H. Curtis, Christian Fenger, N. Senn, J. R. McCullough, Bayard Holmes, Arthur Blavin, C. Sandberg, and A. J. Ochsner.

The Capital District Medical Society was organized recently at Springfield. It includes the regular physicians of Springfield, Decatur, and Jacksonville, and the adjacent territory. The following officers were elected: *President*, Dr. T. A. Wakely, Jacksonville. *Vice-Presidents*, Drs. Geo. N. Kreider, Springfield; W. B. Hostetter, Decatur; and L. H. Clampett, Jacksonville. *Secretary*, Dr. B. B. Griffith, Springfield. *Treasurer*, F. J. Brown, Decatur. *Judicial Council*, Drs. C. E. Black, E. A. Prince, L. P. Walbridge, T. J. Pitner, and E. A. Walbridge. About fifty physicians were in attendance.

In pursuance of a call by Dr. Benjamin Lee, Secretary to the Pennsylvania State Board of Health, a number of prominent sanitarians, health officials, and others connected with sanitary matters, met in conference with the Hon. Selim H. Peabody, Director of the Section of Liberal Arts, and Dr. John H. Rauch, Chairman of the Committee of the American Public Health Association, on a World's Fair sanitary exhibit. The delegates met at 10 A.M., January 14th, in the directors' room. There were present: Dr. Benjamin Lee, Secretary to the Pennsylvania State Board of Health; Dr. Henry B. Baker, Secretary to the Michigan State Board of Health; Dr. Charles N. Hewitt, Secretary to the Minnesota State

Board of Health; Dr. C. D. Smith, member of the Maine State Board of Health; Dr. C. N. Metcalf, Secretary to the Indiana State Board of Health; Dr. F. W. Reilly, Secretary to the Illinois State Board of Health; Dr. J. T. Reeve, Secretary to the Wisconsin State Board of Health; Dr. S. P. Wise, member of the Ohio State Board of Health; Dr. H. H. Clark, member of the Iowa State Board of Health; Dr. M. O'Brien, Secretary to the Kansas State Board of Health; Dr. Charles McLellan, member of the Provincial Board of Ontario; Dr. John D. Ware, Health Commissioner of Chicago: Dr. J. H. D. McShane, Health Commissioner of Baltimore; Dr. U. O. B. Wingate, Health Commissioner of Milwaukee; Dr. D. S. Shellaberger, Health Commissioner of Sioux City; and Dr. John H. Rauch, of the American Public Health Association.

Dr. Rauch, in calling the conference to order, stated the purposes of the conference, and, after a general discussion by the delegates and a statement of the plans and resources of the "liberal arts" department by Prof. Peabody, it was resolved that the members of the conference coöperate with the committee of the American Public Health Association and with the general plan and scope of the World's Fair auxiliary congresses under the Hon. C. C. Bonney.

The Chairman, Dr. Rauch, was authorized to appoint a committee of seven to formulate plans for the State sanitary exhibits, and at the evening session of the conference the members of this committee were instructed to submit their suggestions and views to the Chairman, Dr. Benjamin Lee. The remaining members of the committee appointed by Dr. Rauch, are: Dr. Henry B. Baker, of Michigan; Dr. C. N. Hewitt, of Minnesota; Dr. J. T. Reeve, of Wisconsin; Dr. J. D. Kennedy, of Iowa; Dr. C. N. Metcalf, of Iowa; and Dr. F. W. Reilly, of Illinois.

THE CAUSE OF THE INUTILITY OF ERGOT IN THE INTESTINAL HEMORRHAGE OF ENTERIC FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: As an addendum to the communication in THE MEDICAL NEWS of January 9th, relating to the therapeusis of intestinal hemorrhage in enteric fever, I would like to state that the inutility of ergot in this condition has a source deeper and a significance wider than was noted by your correspondent. A hemorrhage of sufficient gravity in enteric fever to demand a resort to specific measures to cause its cessation usually emanates from an eroded vessel. Ergot here, as in the hematemesis of gastric ulcer—also commonly dependent upon the erosion of an artery—is not only useless, but absolutely harmful, since, from its constricting effects on the vessels being limited to the arterioles, and causing resistance *à fronte*, when a vessel larger than an arteriole is the source of hemorrhage, the increased pressure results in augmentation of the bleeding. This fact, though of vast importance, is apparently known to few. It was pointed out some time ago by Dr. A. H. Smith, in a communication to THE MEDICAL NEWS relating to the hematemesis of gastric ulcer. The principle underlying it should govern the administration of ergot for the control of hemorrhage—to use in that produced by capillary oozing, to avoid in that resulting from rupture of a vessel larger than an arteriole.

Still another important objection to the employment of ergot in the intestinal hemorrhage of enteric fever is the fact that active peristaltic movements are thereby produced, the effects of which would inevitably be to disturb the ulcerated bowel, to provoke more rapid separation of the sloughs, and to aggravate the tendency to bleeding.

These dangers are not imaginary, and are more imminent than that of gangrene observed by Dr. Rodman in his cases.

Very respectfully yours,

D. D. STEWART, M.D.

PHILADELPHIA.

REVIEWS.

PTOMAÏNES, LEUCOMAÏNES, AND BACTERIAL PROTEIDS. By VICTOR C. VAUGHAN, M.D., and FREDERICK G. NOVY, M.D. Second Edition. Philadelphia: Lea Bros. & Co., 1891.

THE second edition of this work will doubtless have the same favorable reception as was accorded the first three years ago. No more clear, concise, and readable exposition of the obscure subjects with which the work has to deal has been written. The work is properly a standard.

This second edition gives evidences of the remarkable progress in the branch of science of which it treats on its very title-page, in the addition of the term "bacterial proteids," designating a group of substances not previously included in the work, and indeed until recently unknown. Throughout the book are further proofs of the advances in knowledge, as in the articles on tuberculosis, diphtheria, swine-plague, rabbit septicemia, pneumonia, and malignant edema, which are entirely new, and in that on tetanus, which has been greatly extended. The chapters on "The Nature of Immunity-giving Substances," "Bacterial Products which Favor the Development of Infectious Diseases," and on "The Germicidal Proteids of the Blood," are new, and contain matter of the greatest interest and importance.

We agree with the authors as to the propriety of rejecting the term "toxalbumins," and adopting the more correct one, "bacterial proteids." However, even with this change, the nomenclature cannot be regarded as satisfactory; we should have been glad to have had the opinion of the authors as to the nomenclature proposed in THE MEDICAL NEWS of July 18, 1891.

ESSENTIALS OF NERVOUS DISEASES AND INSANITY: THEIR SYMPTOMS AND TREATMENT. A MANUAL FOR STUDENTS AND PRACTITIONERS. By JOHN C. SHAW, M.D., Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School, etc. Forty-eight original illustrations, mostly selected from the Author's private practice. Philadelphia: W. B. Saunders, 1891.

THIS little volume, which is No. 21 of "Saunders's Question Compends," contains 190 pages. In his preface the author states that the book is intended to be used "somewhat as a primer for advanced students."

There is much truth in the saying that it is more diffi-

cult to write a small treatise than a large volume. The author of a small book must know what to omit as non-essential; he should say what he has to say in clear and concise language; he must emphasize essential points; he should eschew discussion of controversial matters and rare diseases. We do not think Dr. Shaw has succeeded very well in surmounting these difficulties. His classification of disease seems to us unfortunate and misleading. For instance, peripheral neuritis, alcoholic neuritis, and multiple neuritis, are classed under the head of "Injuries of Nerves." Imperative conceptions, which are symptoms (just as delusions or hallucinations are), are treated as a separate disease under the head of "Degenerative Insanities." Syringomyelia and acromegaly, of interest to the specialist chiefly as rare and curious diseases, are not of enough importance to the student to justify five pages of description. On the other hand, the insufficient space of four pages is devoted to epilepsy and chorea. In dealing with the treatment of melancholia the author omits to call attention to precautionary measures against suicide. The description of paranoia is quite a good one—perhaps the best in the compend. But, taken as a whole, we cannot commend the book.

NEWS ITEMS.

The International Executive Committee of the Pan-American Medical Congress.—The Committee on Organization of the Pan-American Medical Congress, at its meeting at St. Louis last October, elected the following International Executive Committee: The Argentine Republic, Dr. Pedro Lagleyze, of Buenos Ayres; Bolivia, Dr. Emelio Di Tomassi, of La Paz; Brazil, Dr. Carlos Costa, of Rio de Janeiro; British North America, Dr. James F. W. Ross, of Toronto; British West Indies, Dr. James A. DeWolf, of Port of Spain; Chile, Dr. Moises Amaral, of Santiago; United States of Colombia, Dr. P. M. Ibanez, of Bogotá; Costa Rica, Dr. Daniel Nuñez, of San José; Ecuador, Dr. Ricardo Cucalon, of Guayaquil; Guatemala, Dr. Jose Monteris, of Guatemala Nueva; Hayti, Dr. D. Lamothe, of Port au Prince; Spanish Honduras, Dr. George Bernhardt, of Tegucigalpa; Mexico, Dr. Tomés Noriega, City of Mexico; Nicaragua, Dr. J. I. Urtecho, of Grenada; Peru, Dr. J. Caramina Ulloa, of Lima; Salvador, Dr. David J. Guzman, of San Salvador; Spanish West Indies, Dr. Juan Santos Fernandez, of Habana; United States, Dr. A. Vander Veer, of Albany, N. Y.; Uruguay, Dr. Jacinto DeLeon, of Montevideo; Venezuela, Dr. Elias Rodriguez, of Caraccas; Hawaii, Paraguay, Santo Domingo, the Danish, Dutch, and French West Indies are not yet organized. Nominations of local officers have been received from a majority of all of the members of the International Executive Committee, and a number of the lists have been confirmed by the Committee on Organization.

Laboratory of Hygiene, University of Pennsylvania.—It is announced that the laboratory of hygiene of the University of Pennsylvania will be opened for practical work on February 1, 1892. The building contains chemic and bacteriologic laboratories, special rooms for investigations upon air, water, food, soil, clothing, etc., workshops and photo-micrographic rooms, and special arrangements for demonstrating the principles and practice of heating and ventilation, house-drainage, etc. The work of the laboratory will be under the charge of the director, Dr. John S. Billings. Dr. A. C. Abbott has been appointed first assistant, and Dr. Albert A. Ghriskey, assistant in bacteriology. A course in practical hygiene and an elementary course in bacteriology, each of eight weeks, have been established.

University of Michigan.—The first ward of the new hospital of the medical department of the University of Michigan was formally opened January 20th by the Governor of the State. An address on "The Hospital: an Element and Exponent of Medical Education," was delivered by Dr. Albert L. Gihon, Medical Director, United States Navy.

The hospital is provided with modern appliances. The ward just completed contains a clinical amphitheater, consultation-rooms, offices, and accommodations for eighty patients. It has cost about eighty thousand dollars. The plan provides for three additional wards, the erection of one of which will be begun during the current year.

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about one hundred and eighty dollars, the income for one year of the bequest of the late Senor Alvarenga, will be made on July 14, 1892. Essays intended for competition may be upon any subject in medicine, and must be received by the secretary of the College on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college.

The Medical Faculty of the University of Tübingen has offered two prizes for the best essays on each of the following subjects: "A Critical Résumé of Recent Theories of Glaucoma, Preferably Based upon Original Experiments upon the Eyes of Animals;" "The Influences, if any, Exerted by Antipyrin, Antifebrin, and Phenacetin upon the Conditions that Follow the Excessive Use of Alcohol."

The Therapeutic Gazette has undergone an editorial change. Dr. Robert Meade Smith has retired. Dr. Hobart Amory Hare has become editor-in-chief; Dr. George E. de Schweinitz, editor of ophthalmic and aural therapeutics; and Dr. Edward Martin, editor of surgical and genito-urinary therapeutics.

Books and Pamphlets Received.

Intubation of the Larynx. By Carl H. von Klein, A.M., M.D. Reprint, 1891.

Saunders's Pocket Medical Formulary, with an Appendix Containing Posological Table, Formulary and Doses for Hypodermatic Medication, etc. By William M. Powell, M.D. Philadelphia: W. B. Saunders, 1891.

The Supreme Passions of Man. No. 1. By Paul Paquin. Battle Creek, Mich.: The Little Blue Book Company, 1891.

Is a Child Viable at Six and a Half Months? By Llewellyn Eliot, M.D., of Washington, D. C. Reprint, 1891.

A Case of Congenital Cystic Elephantiasis. By W. Reynolds Wilson, M.D. Reprint, 1891.

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ORIGINAL ARTICLES.

OLEOMARGARIN.[1]

BY G. C. CALDWELL, B.S., PH.D.,

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NEARLY all of the ordinary natural fats and fatty oils consist essentially of three glycerides—palmitin, stearin, and olein. The difference in odor and taste whereby they are distinguishable from one another is due to *very small* quantities of other substances that they contain, and that are always associated with them in their natural or in their prepared condition. Castor oil, olive oil, tallow, and lard oil are unmistakably different to our senses of taste and smell; but all of them alike consist essentially of palmitin, stearin, and olein, this mixture being scented and flavored by small quantities of the foreign substances mentioned.

There is an important difference between the fat in milk and some other fats, on the one hand, and the fat of tallow, lard, palm-nut oil, etc., on the other hand—a distinction all the more interesting because it exists between the fat that is deposited on the carcass and that which is secreted in the milk of the same animal. Butter and tallow are mostly but mixtures of olein, palmitin, and stearin, the same three glycerides that are so widely distributed in the fats everywhere; but butter-fat contains, besides the four other glycerides, butyrin, caproin, caprylin, and caprin; but as even these glycerides are as tasteless and odorless as any of the others when purified, nothing of the odor or flavor of butter can be credited to them. This being the case, then, it is only natural that the attempt should be made to give a butter flavor and aroma to the more abundant and much cheaper fats of the animal carcass. It is only a question of transforming the carcass-fat into a fat of the same consistency as that of butter at ordinary temperature, removing its characteristic flavor, and substituting therefor the butter flavor. The first change is easy enough, consisting as it does simply in taking out a certain proportion of the less fusible stearin and palmitin, so as to leave a residue with a larger proportion of olein, and therefore softer at common temperatures, as butter is softer than tallow; since odor and flavor are largely due to volatile and soluble substances, steaming and washing the fat will leave a sufficiently odorless and tasteless product as a basis for receiving the desired butter flavor. It is plain that the available quantity of this product from the carcass-fat is much larger than the available quantity of the material like which it is to be flavored—the butter-fat of milk. How, then, shall this flavor be imparted?

We know quite well that when it comes to communicating the flavor of lemon, strawberry, or raspberry to ice-cream or cake, not even the shadow of the fruit need be cast over the material to be thus flavored; much less need any of its substance be incorporated with the cream or dough. The chemist in his laboratory can manufacture at least many of these flavoring essences more cheaply than they can be made from the fruits. But I am not aware that any essence of cow's butter has ever yet been prepared. A clean mixture of olein, stearin, and palmitin, no matter how carefully the proportions of these three ingredients might be adjusted to secure the right consistency, and no matter how deftly colored, would never pass for butter even with the least fastidious. Therefore the amount of artificial salable butter that can be made from this oleomargarin is limited by the degree of thinness with which real butter-fat, with its butter flavor, can be distributed through it and produce a resemblance to butter.

Although margarin does not occur in animal fats, its name still remains associated with the less fusible part of animal and vegetable fats, although this mixture is one of palmitin and stearin only; and since olein from the other series of glycerides is always associated with palmitin and stearin in these fats, we have the familiar name oleomargarin for this manufactured product; the same name could just as appropriately be given to any fat, and just as incorrectly also, but it has come to be a trade name the meaning of which is understood by everybody. Only when this oleomargarin, or oleo oil, as it is sometimes also called, is churned with milk and water, do we have the real artificial butter or butterine.

The fat, said to be only the caul fat, and possibly so in all the large manufactories, is washed in cold water, surrounded with ice until the animal heat is removed, cut up fine, heated to from 120° to 150° F., allowed to stand until the fat is separated clear from the tissue, then kept in wooden tanks for from twenty-four to thirty-six hours, in a warm room at

[1] Abstract of a lecture delivered before the Franklin Institute, Philadelphia, January 18, 1892.

such a temperature as will favor the crystallizing out of the largest part of the stearin with a little of the palmitin; then, in hydraulic presses in the same room, the solid fat is separated from the liquid, or the oleo oil, as it is called. Another product is prepared from lard in a similar manner, except that no stearin is removed from it, and this goes by the technical name of "neutral." From this "oleo oil" and "neutral," the oleomargarin and butterine are made, more "oleo" being put in if the product is to go to a cold climate, more "neutral" if to a warm one, the proper mixture of the two being churned in a steam-jacketed vessel, with about 48 gallons of milk to 2000 pounds of the fat, or 80 pounds to 500; it is stated that cream is sometimes used in the place of milk; butter-color, or annatto, is used unless forbidden. The churned product is suddenly cooled by allowing it to run out on to ice or cold water, then washed, salted, and worked as butter usually is. The use of lard is comparatively recent, and it is interesting to notice that the first manufacturers were very indignant when it was attempted in the West to palm off a product from lard as oleomargarin; they used about the same contemptuous expressions as the dairymen used so freely when speaking about the oleomargarin.

Such is the substance of the process for the manufacture of artificial butter in its various forms. As to the quality of the product, in the first place it keeps well, if made from clean materials. A second important quality is such close resemblance to genuine butter of a fair quality, that often only experts can distinguish the one from the other. But by far the most important question concerning oleomargarin as food is that of its wholesomeness, as compared with butter. The answer to this question turns on two points: first, the quality of the materials used in its manufacture, and second, its digestibility when properly made. It may be safely said that no other food-product has been so much discussed in respect to its healthfulness, large pecuniary interests being involved.

In the first place, what bearing has the quality of the materials used in the manufacture of oleomargarin on its wholesomeness? Concerning this, most damaging statements have been made, especially at the very beginning of the oleomargarin war. If even the half of these statements were true, then certainly a committee of the New York Legislature, intent on making in its report the very worst showing possible against oleomargarin, in support of a very stringent prohibitory law, would have obtained similar ones from some of the numerous witnesses cited before it; but a careful examination of the whole printed report of 275 pages reveals no worse statement than this: that not merely the caul fat, or that on the membrane investing the viscera is used, but also that on the intestines themselves; and this witness affirms that this fat was in the vats mixed up with some of the excrementitious matters naturally associated with fat in that state. But in another place in the same report the manager of the same factory testifies that not all of the fat received at the establishment is used for oleo, since they manufacture tallow also, and that but a very little of the intestines remains attached to that part of the fat used for oleo. The first witness did not testify that he actually saw the foul fat that he described worked into the oleo oil. No sound proof is anywhere given that such extravagant statements as those that I have quoted are founded on fact, or were anything more than conjectures and guesses.

But oleomargarin has been no less bitterly and extravagantly attacked on another line, namely, with reference to what has been found in it, especially on microscopic examination. Prof. Michels, of New York, in 1878, stated that he had found cells of a suspicious character and fragments of muscle and tissue in some of the samples that he examined; these, however, he acknowledged came from the chopped stomach then used according to the original Megé patent; but he affirmed that trichinæ might get into the butter in this way, and that the heat to which the fat was subjected in the course of the rendering and the crystallizing would not be high enough to kill them. In 1880 a Prof. Piper gave in a Chicago newspaper some startling drawings of what he had seen in samples of oleomargarin butter under the microscope—shreds of animal tissue, spores, and a form often found by him in foul water; and in another paper he gave, side by side, figures of actual tapeworm eggs, and of forms very much like them in appearance, from oleomargarin. Passing on to a later date, when the addition of chopped stomachs and mammary glands had been entirely given up, very little is reported of observations of this kind. A Prof. Nachtrieb is quoted as finding in a sample of butterine parasites that are present in the rectum of swine and in the evacuations of patients suffering from diarrhea; but without further knowledge as to the reliability as a microscopist of this professor, one should give little weight to such a startling statement.

Two samples of artificial butter were reported by an official of the Department of Agriculture, out of ten, as being full of fungi and their spores; but as all of them were reported as being in a bad condition even for samples of butterine, such an observation furnishes no reliable evidence as to the usual quality of the substance; further, the reputation of this observer was not of the best.

The answer to the question of the wholesomeness

of the oleomargarin must then be sought on other lines of inquiry. Fats, as such, are not unwholesome, when not eaten in excess; we need then only to consider whether oleomargarin is as digestible as butter.

By far the best statement of the case, it may be said, against oleomargarin in this respect, is to be found in the second annual report of the New York State Dairy Commissioner for the year 1885, by Dr. R. D. Clark, chemist for the Commissioner. Many authorities are there quoted to the effect that butter is more digestible and wholesome than lard or other natural fats; and this difference is attributed to the more complex composition of the former, and especially to its butyrin; and the effect of this is supposed to be due to the ease with which it breaks up into fatty acid and glycerin; saponification is thus facilitated, and this soap in its turn favors the digestion of the other fats of the butter. The digestion of the fats consists partly in this saponification, and partly in their conversion into an emulsion; Dr. Clark performed some emulsionizing experiments with different fats and the pancreatic juice, which is the chief emulsionizing agent of the digestive liquids. Next to cod-liver oil, butter gave the finest emulsion in twelve hours, while oleomargarin still had many large globules, unchanged, left. It is fair to suppose that the finer the emulsion, and the more quickly it is made, the more readily the fat will be absorbed and assimilated and taken into circulation, and that easy saponification will also favor digestion. Dr. Clark also proved that while butter melts to a clear limpid liquid in thirty-five minutes at 100° F., the oleomargarin was but slightly changed; even after five hours, the latter was still in a semi-solid condition; this property of oleomargarin is certainly not favorable to its digestion. Thus a very good case is made out by Dr. Clark, to the effect that oleomargarin is in all probability less digestible than butter. This view is supported by the results of a comparative test of the proportion of fat absorbed by a man and a boy using butter of the ordinary kind for three days, and then oleomargarin for the same period. The difference was slightly in favor of the butter, but so slight that the writer considered that it might be neglected, except in the case of invalids or very young children. In France the first opinion of medical men, in 1872, as to the digestibility of oleomargarin was not unfavorable; but eight years later it was pronounced against in the Paris Academy of Medicine, the statement being that it could not replace good butter because, on account of the higher percentage of fatty acids, it emulsionized less easily, and was therefore less easily absorbed; but I can find no account of any actual digestion experiments in support of this conclusion, like those of Clark's just quoted, and which are of more account than any theorizing.

The question of the occurrence of germs of disease in oleomargarin is of such great importance, that it needs some little further consideration. The possibility of their occurrence there cannot be denied; and it must be allowed that the heat used in any stage of the manufacture of the oleomargarin is not sufficient to kill these germs. Dr. Clark gives as diseases that may be communicated from animals to man: consumption, anthrax, tapeworm, glanders, foot-and-mouth disease, cow-pox, hydrophobia, etc.; the etc. implies that there are still others, but the list is fearful enough as it is. Now, what evidence is there that there are any of these disease-germs in oleomargarin? Granted that they may be there; but have they ever been found there by reliable observers? Any such evidence, sound and satisfactory, would be the most damaging that could possibly be made against this food-product. The observations made by Piper and Nachtrieb lack utterly the confirmation of repetition by others; no similar observations have ever been reported since. Dr. Clark does not even refer to them. It may, therefore, be safely affirmed that there is no evidence whatever that in the oleomargarin of later years—from 1885 up to the present time—any germs of disease exist.

But good evidence of the communication of any of these diseases to man by the use of oleomargarin would be no less fatal to this food-product. Members of Congress assert that its consumption leads to insanity, Bright's disease, and ailments that undermine the strongest constitution; that it is "freighted with disease, freighted with death;" "that it spreads death throughout the country." Dr. Clark, in response to the call for cases of illness caused by oleomargarin, can only say that "We have seen many cases of sicknesss, much of it dyspepsia, during the period in which bogus butter was so freely sold without restriction, for which we have been unable to assign any cause; this cause may have been the use of artificial butter, but the deceptive manner in which it has been handled prevented physicians from ascertaining its effects; consequently we must judge by its qualities." This is a confession that up to that time—1886—and only shortly after a time when it was claimed that twenty million pounds per annum were made and mostly used in New York and New England, no case of disease nor any general specific form of disease could be pointed out as due even in the most indirect manner to the use of this food-product. A widely quoted statement to the effect that the physicians of Chicago attributed an epidemic of winter cholera to the extended use of butterine in that city, into the composition of which lard entered largely, may be taken for what it is

worth, as an exception to this statement of mine. I cannot verify or dispute it.

The Chairman of the New York Legislative Committee, from which emanated the present stringent prohibitory laws of that State, in his report on the committee's investigations, could only say in reference to the wholesomeness of oleomargarin, that sickness of various kinds may result from its use, communicated by the germs of disease that have been found in samples of it, but nowhere in the report of the committee is any evidence adduced of the occurrence of these germs. Even a single case of disease, unmistakably attributable to oleomargarin, would have been invaluable in promoting the passage of the desired law, but he could not produce it. And in another place in the report he frankly admits that "There is evidence on both sides as to its wholesomeness. Time and further investigation may be needed in order to establish a satisfactory solution of the question of trichinæ, animalcules, or germs of disease in raw animal fats and their tissues. Meanwhile, however, there is well-grounded suspicion of them." Time there has been—years of it—since that report was made public. The prohibitory law was passed, but no further investigation has been reported on the trichinæ and germ question, and the danger of disease from this cause must be regarded as unproved.

Beyond what I have given you in what has gone before, I find nothing more in the literature of the subject for the past twenty years that relates to the question of the danger to health in the use of oleomargarin, except numerous statements by scientific men of eminence in this and other countries. Morton, President of Stevens Institute; Chandler, of Columbia College, for so many years President of the New York City Board of Health; Johnson and Brewer, of Yale, both well known by the farmers throughout the country for the good work they have done in behalf of agriculture; Goessman, now and for many years past Director of the Massachusetts Agricultural Experiment Station; Atwater, of Connecticut, so well known for his writings on food products; Armsby, Director of the Pennsylvania Experiment Station; Alvord, most prominently identified with the interests of farmers for many years, and now Director of the Maryland Experiment Station—all have spoken or written in favor of oleomargarin as a food-product. It has required the courage of their convictions for many of these men to utter their opinions, and they have in many cases had only the comfort of a clear conscience to offset the abuse of the agricultural press that has been heaped upon them. Abroad I would mention particularly Lyon Playfair, "one of the most distinguished chemists and sanitary authorities of England." In his place as member of Parliament, he spoke in a very different strain from that indulged in by some of our Congressmen, when he said: "As to the relative wholesomeness of oleomargarin and butter, I do not think there is anything to choose between them. Certainly rancid oleomargarin is a nasty and unwholesome compound, but not any more so than nasty and rancid butter, which abounds in so many markets. Both are unfit for human food, although both may be well purified by well-known processes." I would like to quote more freely from his admirable speech, but lack of time forbids.

Finally, allow me to call your attention to the most remarkable absence of any reference to this food-product by the most active and efficient State boards of health in this country. If there were such dangers lurking in oleomargarin as has so many times been asserted, surely these boards of health have seriously failed in the discharge of their duty in giving so little attention as they have to the matter. A careful examination of the file of such State board of health reports as are in our library discovers almost no reference to oleomargarin.

The whole question of the wholesomeness of oleomargarin as food is summed up in my own mind about in this wise: When properly made from fresh and clean material, it differs but slightly from butter in healthfulness, and only because of its somewhat less easy digestibility, and that dyspepsia is likely to be due to a far greater extent to other causes than to this, even among those who, because of its cheapness as compared with butter, would be likely to use it largely. It is possible that it may be made from such unsuitable materials as to contain germs of disease, and that it might thus communicate disease to man, but there is no positive proof that it is now made of such materials, or ever has been, or that any disease has ever been communicated to man by its use. But the possibility exists all the same, and the only way to make it of no effect is by careful inspection of the process of manufacture by proper officials, and such inspection would be necessary in order to put the wholesomeness of the substance beyond all question.

New York being a great dairy State, and also, in the beginning, the great center of the manufacture of oleomargarin, was naturally one of the States in which special legislation began earliest. Two enactments in 1882 prohibited, first, the coloring of the product to make it resemble butter, or the sale of any such colored product; and, second, required that all packages containing any such imitation of butter or cheese should be plainly labelled. In 1884 the manufacture and sale of such imitation were forbidden in a special section of a general dairy law. This was pronounced unconstitutional by the Court of Appeals, but another slightly dif-

ferent enactment in the following year was allowed to stand. At the close of 1885, Maine, Michigan, Minnesota, Missouri, New Jersey, Pennsylvania, and Wisconsin, beside New York, had laws prohibiting the sale of oleomargarin or any kind of artificial butter made from other fats, and New Hampshire had a law that was practically prohibitory, requiring that all imitations of butter should be colored pink. California, Connecticut, Delaware, Ohio, Oregon, Rhode Island, Tennessee, Vermont, West Virginia had simply regulative laws, providing that the substance shall be sold under its own name. At the close of the year ending June 30, 1891, Maryland had been added to the list of prohibitory States, and Minnesota, Vermont, and West Virginia had joined company with New Hampshire in requiring the pink coloration of the artificial butter, while New Jersey, Massachusetts, and Ohio prohibited the sale of it only if colored in imitation of butter. Of the other States, Arkansas, Kentucky, North Carolina, Tennessee, Utah, and Washington had no enactments in regard to the matter. The remainder of the States, twenty-five in number, only required that it should be sold under its own name, and not as genuine butter. Abroad the laws are all regulative and not prohibitory.

In 1886 a national law was passed under the title of "An Act defining butter, also imposing a tax upon and regulating the manufacture and sale and importation of oleomargarin." This Act required every manufacturer to pay a license fee of four hundred and eighty dollars, and every retail dealer selling in quantities less than ten pounds to pay a fee of forty-eight dollars, and that every pound sold shall pay a tax of five cents. It was first attempted to make this ten cents, but by reduction to the lower figure the enactment was saved from being practically prohibitory. President Cleveland approved the measure on the ground that Congress is justified in making oleomargarin a subject of internal taxation; that Congress may clearly levy such taxes as will confer incidental advantages on the people, and that no industry is better entitled to such incidental advantages as may follow this legislation than our farming interests, and that the quality of the article will come under more strict scrutiny, so that only a good and clean product will be sold, and, finally, the product will be sold under its own name, and fraud and imposition will thereby be suppressed.

The constitutionality of this final enactment was decided on this ground: that when a product of manufacture is turned out so closely resembling some other product of which the manufacture is already established as not to be distinguishable from it by the senses, and is made for sale in the place of that substance, it is constitutional to prohibit the manufacture and sale of it. But if it is turned out, say uncolored, then its manufacture and sale cannot be prohibited, except on plain grounds of injury to the health of the community.

Recalling to mind some of the extravagant statements in Congress in support of this measure, and especially of the ten-cent clause of it, the comment on it by a prominent agricultural paper is appropriate, that "If oleo is as bad as it has been painted, the new law will make the Government party to the crime of permitting an unwholesome article, and is, therefore, simply and purely a compromise with the devil." I wonder how many actually believed that it was so bad?

In the case of the prohibitory law of this State, the Supreme Court affirmed its constitutionality, saying that "the manufacture of an article may alike be prohibited by the legislature, if in their judgment the protection of the public from injury and fraud requires it. The fact that the prohibited article may be innocuous is irrelevant—the sale of a mixture of pure water and milk has been prohibited." Here, again, the question of the public health is not taken into account. Of the same character was the decision of the Missouri Court of Appeals on the constitutionality of the prohibitory law there; nothing was said about the public health.

In the case of the almost frantic appeals sent out from Washington at the time that the practically prohibitory bill with the ten-cent clause was pending, it was the farmers of the country who were called upon to work upon their representatives directly, and upon the Senate through their respective legislatures, to secure the sufficient support of the bill in Congress.

Not a few protests have appeared from time to time against such legislation, even in the agricultural press. One of the most prominent dairy writers of the country, writing before the passage of these laws said: "There is no law, and there can be no law, to prevent its sale for what it is." Another, who, while he lived, was looked up to as among the highest authorities in the country on dairying, when asked if the manufacture of oleomargarin should be prohibited by law, answered: "By no means; its manufacture is as legitimate as that of butter. Its manufacture is actually a blessing. On the one hand it is suppressing the lower grades of butter, and on the other hand it makes the finer brands of creamery butter more sought after. There is nothing for the dairymen to fear in it; their safety can be insured by improving their butter product."

As to the total production in the country at any time previously to the passage of the national law, there appear to be no reliable data. It was wildly stated to be 200,000,000 pounds; it was allowed by those not interested in making the estimate too

high, that the amount may have been half as great. For the fiscal year ending June 30, 1886, it was estimated on the basis of data claimed to be reasonably sound, to be about 33,000,000 pounds. In the following year it was nearly 34,350,000 pounds, in the next year 35,664,000. During the year ending June 30, 1891, 44,000,000 pounds were produced, and a still larger output is predicted for the year ending June 30, 1892.

As to the quality of the product now, as compared with what it was in the first years, such a comparison cannot be made with any degree of satisfaction, since we have so few reliable data based on official inspection of the products. President Cleveland gave this as one reason for his approval of the national law, that the quality of the article would come under more strict scrutiny, so that only a good and clean product would be sold. But it cannot be said that this hope is justified. In the first report of the commissioner under the new law, the inspectors in some cases stated that they had examined into the character of the materials used at the factories, and found everything as it should be. But since that time I find no evidence in any of the reports that any attention is given to this matter by the inspectors.

To sum up what appears to me the fair position in regard to oleomargarin: It is a food product, unquestionably; no legislation can rule it out of the list of food products. Taken into the system it follows the same course as butter does, is changed in the same way, if not perhaps so completely; is taken into the circulation and then serves precisely the same purpose that butter does. When properly made from proper materials it is entirely harmless, except possibly when consumed as freely as butter by persons with weak digestive power.

While it is claimed by manufacturers that a good artificial butter cannot be made if fats are used that are not clean and wholesome at the start, it may not be that this is fully established. But on the other hand, it must be granted that there is no evidence that any community in which artificial butter has been used, even freely and without any official inspection or restriction, has been any the worse for its use in respect to health, either individually or collectively. These being the facts in the case, it is not surprising that many regard as unjust any legislation that prohibits the manufacture or sale of this substance, whether directly or by such ridiculous subterfuges as requiring it to be colored pink or any other abnormal color. The chief motive, nay, almost the only real, hearty motive for this legislation was that of attempting to save from pecuniary damage another industry working along in the same line.

On the other hand, oleomargarin is not butter, and it is wrong to sell it as butter, no matter how good the imitation may be; probably its manufacturers and dealers have brought all this trouble in the way of prohibitive legislation on themselves, by their attempts to sell it as butter. All over the civilized world, general or special laws exist prohibiting the selling of anything for what it is not; no one denies the equity of these laws. When a man sells oleomargarin as butter, he is violating these laws, and just in proportion to the ease with which the imitation can be palmed off for what it is not, and just in proportion to the value of other useful industries that are injured by such deceit, should be the penalties imposed on the fraud, and the efficiency of the means for its detection, so that the producer of the genuine article shall not need to go far out of his way for the means of defence. Therefore laws requiring that oleomargarin shall be sold for what it is are just laws, I care not how stringent they may be.

Furthermore, there is work for boards of health in connection with the manufacture and sale of this food product in States where these are permitted; especially should its manufacture be watched. This needs to be done at least until it has been fully established that only clear fats from animals killed in health can be used. The large license fee required of manufacturers throws the manufacture into comparatively few hands, and thus inspection is rendered more easy. Under such restrictions it seems to me that the trade in this food product might be safely left to itself—and that it might be a blessing to the community as a whole in supplying, at low prices, a savory substitute for butter, which the poorer classes have to eat, far better in quality than most of that which the poorer classes have to eat if they can get only genuine butter; and for those who can afford to pay for good butter, the opportunity to get it will be better, for dairymen will be obliged to make good butter if they make it at all.

THE NERVOUS AND MENTAL PHENOMENA AND SEQUELÆ OF INFLUENZA.[1]

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THE prominence of nervous and mental phenomena has been a striking feature of the recent epidemics of influenza. Much has been written, but mainly in a desultory way, about the symptoms of the disease referable to the nervous system, and about its nervous and mental sequelæ. The part played by the nervous system in the etiology and history of the disease has been variously interpreted. One holds that it is a "nervous disease," without

[1] Abstract of a paper read before the Philadelphia County Medical Society, January 13, 1892.

explanation; another describes it as a pneumogastric neurosis; another as a neuropathy due to ptomaïne poisoning. According to Blocq, cited by Church,[1] the primary infectious action is exerted upon the nervous system during the disorder, while sequelæ are to be attributed to secondary intoxication by ptomaïnes. Cheston Morris,[2] of Philadelphia, advances the theory that the general symptoms of influenza may be traced to a derangement of function or partial paralysis of the pneumogastric nerve, and that the affection is brought about by conditions of the atmosphere that particularly tax the cardio-pulmonary apparatus, which is regulated by this nerve—a view that, after all, relegates the disease to an atmospheric or infectious cause. Graves long ago referred the bronchial and pulmonary symptoms to lesions of the nervous apparatus of the lungs, and Blakiston regarded the disease as a disorder of the nervous system, with concomitant derangement of the organs of digestion, circulation, etc. Levick,[3] who quotes the last two authorities, holds that certain symptoms are produced when the poison is expended upon the sensorium, and certain others when its influence is chiefly exerted on the respiratory centers.

The analogies or relationships between influenza and other diseases generally recognized as belonging to the nervous system, either primarily or because of the situation of their most notable lesions, have been strongly developed by able writers, as by Levick, for example, who has even suggested that epidemic cerebro-spinal fever, or cerebro-spinal meningitis, may simply be a malignant form of influenza—a view to which he was led because of the resemblance in the symptoms of the two diseases, which differ in degree rather than in nature, and also because for three centuries the two have occurred coincidently or in close sequence.

Grasset and Rauzier,[4] in a monograph on the influenza of 1889–90, lay great stress on the enormous predominance of the nervous over the catarrhal elements in the epidemic, as indicated by the high fever, the intense cephalalgia, the marked delirium, the widespread pain, and the excessive nervous irritability. They refer to cases reported by M. Coustan, in which the entire symptomatology of the disease seems to have reduced itself to a horrible migraine.

According to Schmitz,[5] influenza is a disease of the nervous system, with secondary involvement of the heart, lungs, and digestive organs. In several hundred cases that he observed the nervous symptoms were always primary, and were in every case followed by secondary manifestations in other organs.

The briefest consideration of the subject brings forcibly to mind the fact that all diseases of infectious or toxic origin—epidemic, endemic, sporadic, or accidental—may involve any or all parts of the nervous system with a result that will be proportionate—first, to the virulence of the infecting agent; and, second, to the resistance of the individual, whether or not this be affected by constitutional predisposition or by the results of previous injury or disease. The etiologic elements may differ, but a bond of union and a close resemblance can be recognized among the effects on the nervous system of all contagious and infectious diseases, such as variola, scarlatina, diphtheria, measles, whooping-cough, typhoid fever, typhus fever, leprosy, mumps, cholera, erysipelas, puerperal fever, influenza, or cerebro spinal meningitis; of all such constitutional and diathetic affections as tuberculosis, gout, rheumatism, and diabetes; and of all such toxic agents artificially introduced into the system as alcohol, mercury, lead, arsenic, copper, and poisonous gases. These diseases, these diatheses, and these poisonous liquids, metals, and gases produce or may produce nervous and mental phenomena of the same character, differing in degree in particular cases and for special reasons.

In the course of any of the affections named there may at one time or another be present such symptoms as great mental and nervous debility, irritability, restlessness, sleeplessness, or the opposite states of torpor, stupor, hebetude, or coma; delirium; vertigo or syncope; aches and pains of all degrees of severity referred to various nerve-areas; hyperesthesia of the skin, of muscle-masses, or confined to nerve-trunks or branches; spasms, local or general, and with or without loss of consciousness; sometimes mental disturbance amounting to true mania or melancholia—in brief, any infectious or toxic disease may produce the same symptom, syndrome, or train of phenomena, as a result of the introduction into the system of an agent that directly and powerfully poisons nerve-centers, and possibly also nervous conducting tissues.

Following all infectious, diathetic, or toxic diseases, moreover, or directly springing from them, common experience teaches that we may have great nervous or general weakness; forms of insanity of the depressive type; paresis and paralysis of every grade from an affection of a single muscle to that of all the extremities, and even more; localized spasm or cramp; general convulsions;

[1] Church: Chicago Medical Recorder, vol. i, No. 5, 1891, p. 418–426.

[2] Morris: American Lancet, March, 1891.

[3] Levick: Am. Journ. Med. Sci., January, 1864, and re-publication in pamphlet form, with notes of the Influenza of 1889–90.

[4] Grasset and Rauzier: Leçon sur la Grippe de l'Hiver, 1889–90: Montpellier and Paris, 1890. Monograph of 98 pages.

[5] Schmitz: Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medizin, 179, 1891. Cited in American Review of Insanity and Nervous Disease, December, 1891.

pains in nerves, muscles, and joints; and losses or perversions of sensation.

These symptoms and conditions, which may occur at the onset, during, or after the subsidence of any infectious or toxic disease, are those that constitute the nervous features of the prevailing epidemic.

Any attempt to classify the nervous and mental phenomena of influenza must be attended with great difficulties. There are, in the first place, symptoms and conditions that, although manifested in non-nervous organs, are directly traceable to a nervous origin; secondly, affections that would be readily recognized as properly referred to the nervous system; and, thirdly, affections occurring in nervous tissues and organs, although, strictly speaking, not nervous diseases.

I will but briefly refer to the first of these classes. I wish simply to emphasize the fact that some of the most prominent pulmonary, cardiac, and vascular affections of influenza can best be explained on neural theories. Many personal observations have led me to the conclusion, not new, which has recently been well presented by Elliott,[1] of New Orleans, that the pneumonias of influenza are often due to vasomotor paralysis; that they are, in fact, forms of blood-stasis or passive congestion from vasomotor paralysis, which in its turn is dependent upon the action of the infection upon the pneumogastric centers and the nervous system in general. A distinction can be made between the true pneumonic lung and this "grip lung," as it has been termed by Elliott.

Many disorders in various parts of the body are best explained on this theory of local vasomotor paralysis, although it is not necessary to attempt to force this explanation for all. Hemorrhages, minute or even of considerable size, occurring in diverse localities, as in the retina, membrana tympani, and internal auditory apparatus, or in the skin, or in mucous or serous membranes, may be due to deficient vasomotor tonus. Brain, kidneys, liver, or pelvic organs may suffer from forms of passive hyperemia, subacute or chronic, which are in fact due to vasomotor palsy. Occasionally, we meet with cases of vasomotor disorders of the extremities, such as flushed or pallid fingers.

Even trophic affections have been observed. Wilson,[2] for example, refers to gangrene of the lungs as one of the less common complications. Abscesses of the limbs have been recorded. Grasset records two observations of eschars occurring in young subjects in the absence of prolonged decubitus. The greater tendency in surgical cases to suppuration may have its explanation in the depression of healthful vasomotor and trophic influence.

The peculiar forms of pulse, and the uncertain or perverted action of the heart, progressing in some cases to cardiac palsy and death, are in a strict sense nervous phenomena due to paralysis, partial or complete, of the inhibitory apparatus of the heart. Tachycardia and irregularity of action of the heart may remain as sequelæ.

I shall now take up those symptoms and affections that would clearly be recognized as belonging to the nervous system.

I believe, with Church, "that the infection of influenza has a marked action upon the nervous system which may give rise to immediate acute manifestations or to remote and persistent conditions; and that, in the predisposed, grippe is competent to cause marked excitement or great depression of the motor, sensory, and mental nervous apparatus."

Great nervous and mental prostration, both as an acute manifestation and as a persisting sequel, has engaged the attention and required the treatment of all practitioners. The mental depression often present as an initial symptom has in some cases been simply overpowering. In some cases it seems as though the brain-centers had been poisoned to the limits of human endurance, consciousness, however, being preserved. In other cases, even consciousness itself has been overwhelmed.

Not a few patients that suffered from influenza during the early period of the present epidemic are still victims of profound neurasthenia. I now refer to cases that are not distinctively of the melancholic type. These neurasthenics are unable to endure an ordinary amount of work; their nervous forces are soon routed; they are weak, worrisome, and unrecuperative. The cardiac weakness that has been left is undoubtedly in part the cause of this neurasthenia.

Among organic nervous diseases that have developed during the influenza, or have been left in its wake, are, in the order of their frequency, so far as my personal observation has gone, neuritis, meningitis, myelitis, and cerebritis, or various combinations of these inflammatory affections, as, for example, concurrent neuritis and myelitis, meningomyelitis, or meningo encephalitis.

Probably no single affection of the nervous system has been so common during and after influenza, and particularly as a sequel, as neuritis. Almost every variety of neuritis, as regards location and diffusion, has been recorded, and has come under my personal notice. Multiple neuritis, while not common, has not been rare; and I have seen an apparent concurrence of this affection with poliomyelitis in the same case. Isolated neuritis of almost every cranial

[1] Elliott: The Climatologist, vol. i, No. 1, 1891.

[2] Wilson: American System of Practical Medicine, vol. i, p. 870.

nerve has been recorded, with such resulting conditions as optic atrophy, loss of smell and of taste, ophthalmoplegias, both internal and external; oculo-motor, facial, and bulbar or pseudo-bulbar palsies of various types, including true pneumogastric paralysis. Several cases of specially located affections of the sympathetic ganglia or nerves have been recorded. Of the forms of local neuritis most common may be mentioned the supra-orbital, intercostal, sciatic, and plantar.

An interesting case of neuritis with a myxedema toid condition of the limbs presented herself at the Philadelphia Polyclinic recently, five weeks after a sharp attack of influenza. She was extremely weak in the legs, and was scarcely able to drag herself around. In a few days her feet and legs began to swell and to be painful, and soon became of enormous size and exquisitely tender. She has gradually improved, but still has a condition of firm swelling, from her knees to her ankles, which does not pit on pressure, and she also still has great tenderness on squeezing the feet or ankles, or in handling the nerves or muscles of the limbs. She has no cardiac affection.

The articular pain and other so-called rheumatic manifestations so numerous during and after attacks of influenza, are best explained on the theory of infectious neuritis or myositis.

The cases with articular and other pains, and with swelling, recall the endemic or epidemic form of multiple neuritis known as beri-beri, in which the chief phenomena are edema and paralysis of the limbs, with marked pain, hyperesthesia and paresthesia, followed later by anesthesia, loss of knee-jerk, and enfeeblement of electric reactions. Myositis certainly, and probably also periostitis, occur as complications or sequences of influenza, and usually in association with neuritis of some type.

Many of the reports speak of the frequent occurrence of various neuralgias. Doubtless a distinction is seldom made by observers and recorders between neuralgia and neuritis, which are or may be separate affections. Practically those cases should be regarded as neuralgic, in which pain is refered to certain nerve-lines or radiations; but in which pain on pressure, and other phenomena of neuritis, such as anesthesia, vasomotor, and trophic disorders, and even paralysis, are wanting. In my own experience the cases that could be properly diagnosticated as neuritis are by far the most common. The distinctively neuralgic pains are probably due to toxemically depressed or exhausted sensory nerve-roots or centers in the cord and bulb.

Of diseases of the spinal cord proper, occurring as complications or consequences of influenza, the reported cases are not numerous, but they are none the less important. A few cases of myelitis have been put on record by native and foreign observers —in one that I recall all four extremities were paralyzed. As would be expected, in accordance with the analogies with other infectious and toxic diseases, anterior poliomyelitis is the most common type. I have had several cases of temporary paralysis of one or more limbs, which, owing to the absence of pain and of cerebral symptoms, were apparently spinal in origin, and probably mild forms of inflammation.

Several observers have reported cases of bulbar paralysis, and one striking example of this disease, attributed to the influenza, has come under my own observation, although exactly how far the influenza was responsible it is difficult to say. The patient, a clergyman, soon after a severe attack of influenza, noticed that he was losing power in his hands, which soon atrophied. Some months later difficulty of speech appeared, and when the man came under my observation he presented symptoms of well-marked bulbar paralysis, with progressive muscular atrophy, chiefly involving the upper extremities.

In accordance with analogy, we would expect the occasional occurrence both of nuclear polioencephalitis, and even rarely cortical polioencephalitis. One or two of the few cases of probable polioencephalitis of the latter type have occurred in patients suddenly stricken with fever, loss of appetite, and other symptoms that may have been due to infection.

Priester[1] has reported the case of a man fifty-four years old, who was taken with influenza in February, and in the beginning of March was seized with extremely violent headache that resisted all medication; subsequently the patient became deeply somnolent, remaining so for four weeks; he could be aroused, but was apathetic and soon slept again. Reflexes and temperature were normal; the pulse was from 46 to 60. The patient had no paralytic symptoms, and slowly improved. The affection resembled paralyzing vertigo—what is described as a disease of the hot season. Tumor could be excluded by the absence of all focal symptoms a year before the attack. The most probable cause was a pathologic process involving the central gray matter of the third ventricle, so that the disease would be brought into close relation with polioencephalitis of the nuclear type. Kaumheimer has observed an exactly parallel case, which originated in April, and lasted into July before recovery took place.

That meningitis, either cerebral, spinal, or cerebrospinal, occurs during the progress or decline of influenza cannot be doubted in the light of the evidence that has been presented by various observers, and particularly during the epidemics of the last three years. It is, however, a comparatively rare

[1] Priester: Wien. med. Woch., No. 27, S. 1159.

concomitant or complication. Some of the facts adduced as proofs of the existence of meningitis, and some of the cases reported as examples of the disease, are clearly instances of improper interpretation. The intense cephalalgia and rhachialgia; the atrocious pains variously localized in the face, trunk, limb-nerves, muscles, or joints; the vigliant delirium, with hallucinations and delusions, sometimes assuming great gravity; the intense vertigo, with or without nausea and vomiting—these and other well-known nervous manifestations, which are so prominent in many cases at the initiation of the disease, are not necessarily evidences of meningitis, or even meningeal hyperemia. Rather are they due to an overwhelming toxemia of the nerve-centers and of the brain. Severe and terrible in character at first, they frequently pass away almost as rapidly as they came, which they would not do if they were the evidences of a true meningitis. The great prostration that remains shows that the centers of nervous energy have been subjected to a depressing influence of great virulence, not that merely enveloping membranes composed mainly of fibrous tissue and bloodvessels have been congested or inflamed. Nor is there reason why such congestion or inflammation should leave such results.

The reports of cases of meningitis must thus be received cautiously, and in some instances incredulously. They are only to be relied upon when confirmed by autopsies, or when made by competent and reliable observers.

It may also be worth while at this point to refer to this somewhat frequent diagnosis. A diagnosis of chronic meningitis as one of the sequelæ of influenza is sometimes made because of the presence of persistent pain in or on the head. Experience has led me to believe that this pain is usually neuritic rather than meningeal. Even deep-seated intracranial pain does not necessarily indicate meningitis. It may be due to neuritis, just as certainly as a pain in the hand or foot. The fifth nerve has an immense distribution within as well as outside the cranium, largely to the dura mater but also to other tissues and parts. It is a pathologic possibility to have dural neuritis without a pachymeningitis, and this is the true explanation of some pains, both acute and chronic, which are present in other diseases as well as in influenza.

The variety of meningitis most likely to be present in influenza is an inflammation of the pia-arachnoid or soft membranes—lepto-meningitis. From observations, corroborated by autopsies, I know that this affection may exist without pain; while pain of varying degrees of severity, and usually intense, is practically invariable in pachymeningitis. Lepto-meningitis, however, is not usually without pain and hyperesthesia as symptoms, but these may be absent; their presence or absence will depend upon the location, extent, grade, and complications of the meningitis.

While believing that these criticisms upon the sometimes hasty and the too frequent diagnosis of meningitis in influenza, and indeed in many other infectious and febrile diseases, are just, and can be sustained, it remains true that a genuine meningitis, sometimes of malignant type, may appear during the progress of or closely following influenza. Competent observers have reported cases of this character, and in a few instances the diagnosis has been confirmed by autopsies. The diagnosis should be based upon the signs and symptoms that would be satisfying as to the existence of meningitis from any cause; not alone on the presence of such phenomena as headache, vertigo, and vomiting, but on such more convincing manifestations as optic neuritis, and localized spasms or palsies, either cortical or of cranial nerves.

The fact that meningitis, and even the cerebro-spinal form, does occasionally occur in association with influenza, is by no means proof that this disease and epidemic cerebro-spinal fever are identical. It simply emphasizes the point that every infectious or poisonous agent introduced into the economy may produce the same or similar pathologic results in the nervous system. Largely according to the vulnerability, special or general, of certain tissues and organs, will be the preponderance of this or of that form of so-called disease—for instance, of neuritis, myelitis, meningitis, cerebritis, or of combinations of these affections. All infectious and toxic diseases present neuritis as the most common acute or chronic inflammatory manifestation, although myelitis, cerebritis, and meningitis may occur. Even in cerebro-spinal fever, as I was perhaps the first to point out, multiple neuritis is a common complication; but the infection being virulent and overwhelming, we may not only have meningitis but even meningo-encephalitis, or meningo-myelitis, with all of the concomitant malignant phenomena and permanently disastrous results.

Vertigo, like pain, is another symptom, often improperly referred to meningeal or cerebral inflammation. It is sometimes due to such disease, but occurring in influenza it may arise from other causes, as, for instance, from extravasations into the labyrinth or other portions of the auditory apparatus, or from profound cerebral exhaustion.

Müller[1] reports the case of a man fifty years old, who after an attack of influenza presented great physical exhaustion. In a few weeks his mind seemed affected and he became somnolent, so that he could be roused only with difficulty and would

[1] Müller: Berlin. klin. Woch., No. 37, 1890. Cited in American Journal of Insanity and Nervous Diseases, December, 1891.

then fall asleep again. Pain was present upon pressure over the vertebræ; the neck was rigid; the pulse was small and irregular; the skin-reflexes were diminished; and the tendon-reflexes were absent. In two weeks he began to improve. It is believed that the case was one of cerebro-spinal meningitis, such as is seen after infectious diseases.

Without entering into a discussion of their pathology or their peculiarities, I shall briefly mention a few other forms of nervous disorder, occurring during the course of, or apparently as sequelæ of influenza, examples of which have come under personal observation. Various observers have reported the occurrence of convulsions. In a few instances the convulsive habit has been established, and the patients have remained up to the time of report as cases of epilepsy. I have seen two such cases. Hystero-epilepsy and other grave hysterical phenomena have been initiated by an attack of influenza, or have recurred in cases in which the symptoms had long been dormant. Of local spasmodic affections I have seen no records; but one case of persistent clonic torticollis, with some pain and tenderness in the distribution of the spinal accessory nerve, has been in attendance at the Philadelphia Polyclinic. Two cases of facial paralysis, occurring immediately after an attack of influenza, have come under observation.

Many affections not of, but occurring in, the nervous system have been reported as complications or as sequences of influenza. These include such affections as apoplexy, due either to hemorrhage, thrombosis, or embolism. A patient at the Polyclinic, a man thirty-seven years old, a month after an attack of influenza in which he was not confined to bed, but suffered severely from headache, cough, and persistent general weakness, was suddenly paralyzed on the right half of his body, and became completely aphasic. Well-marked cardiac murmurs were present. In this and similar cases, influenza is probably causative by lighting up old endocardial trouble, or in consequence of the blood dyscrasia and general prostration that it leaves.

Various observers have reported cases of monoplegia and hemiplegia, without indicating their pathologic character.

I recently saw, in consultation, a typical hemorrhagic apoplexy in a case of influenza in a woman about sixty years old, who had previously been in fair health, and was not known to have had any disease of the kidneys or heart, although her vessels were somewhat atheromatous. Prentiss[1] has reported three cases of cerebral apoplexy occurring during the progress of influenza; one was in a man fifty-seven years of age; another in a man of eighty-seven; a third in a woman of sixty-seven. At least one of these was hemorrhagic; the other two were probably thrombotic. In cases of this character the infective agent predisposes to the occurrence of apoplexy both by the changes in the blood to which it gives rise, by its effects upon cardiac action, and by the general debility induced. Such apoplexies might occur from other depressing causes; they are to be regarded not as phenomena, but rather as accidents of the epidemic.

Uremic convulsions in patients suffering from chronic nephritis have been precipitated by an attack of influenza. It has also seemed to me that influenza has been active in lighting up latent syphilitic taint.

In one case of paretic dementia of somewhat irregular type, seen in consultation, the initial symptoms of the disorder were observed soon after recovery from a severe attack of influenza, the wife and friends of the patient, in fact, attributing the mental disorder to this attack. The probabilities are that syphilis was present, but latent, prior to the epidemic.

Purulent meningitis and brain-abscesses have been somewhat frequently noted in connection with the numerous instances of purulent otitis media.

The relations of influenza to insanity have not received much attention from writers.

The following conclusions compress into small compass so much that is valuable with reference to the relation between influenza and the psychoses, that I cannot do better than quote them. They are reported as the conclusions arrived at by Dr. Leledy, and were presented to the Medical Society of London by Dr. Savage:[1] "1. Influenza, like other febrile affections, may establish a psychopathy. 2. Insanity may develop at various periods of the attack. 3. Influenza may induce any form of insanity. 4. No specific symptoms are manifested. 5. The rôle of influenza in the causation of insanity is a variable one. 6. Influenza may be a predisposing or exciting cause. 7. In all cases there is some acquired or inherited predisposition. 8. The insanity is the result of altered brain-nutrition, possibly toxic. 9. The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza. 10. The curability depends on general rather than on special conditions. 11. The insane are less disposed to influenza than are the sane. 12. In rare instances, influenza has cured psychoses. 13. The insane may have mental remissions during the influenza. 14. There is no special indication in treatment. 15. Influenza may lead to crimes and to medico-legal issues."

I can indorse from experience almost every one

[1] Prentiss: THE MEDICAL NEWS, August 29, 1891.

[1] Savage: Lancet, No. 3558, and THE MEDICAL NEWS, January 16, 1892.

of these conclusions. With reference to the statement that no specific symptoms are manifested, it should be said, however, that while this in a general sense is true, the most frequent type is a form of melancholia.

Active insanity has been observed at the onset of influenza and during its height, but more particularly during its period of decline and convalescence. The published cases have been recorded chiefly as instances of acute mania or melancholia. The commonest type of influenzal mental disorder, as I have just stated, is a form of melancholia or lypemania; but as this not infrequently assumes the form of melancholia agitata, it is often regarded as mania by practitioners not accustomed to differentiate the varieties of insanity. The patients are intensely depressed and emotional; they are filled with apprehensions of disgrace and ruin; they believe that they will never recover their former health; they are suspicious and delusional with reference to those that surround them; they are frequently unwilling to eat, or to rest, or to take medicine; and in some cases they have definite delusions of terrible character, for the most part hypochondriac or religious. They are frequently plagued with the thought of suicide, and sometimes make successful or unsuccessful suicidal attempts. They have been deprived by the ravages of disease of mental and moral stamina. In the majority of cases, but not in all, there is some hereditary or acquired predisposition. While, however, influenza usually gives rise to mental disorder of special type —a form of delusional melancholia—under special conditions it may be, as stated by Savage, the starting-point or exciting cause of any variety of mental disorder, such as mania, paranoia, paretic dementia, hebephrenia, etc.

K. Helweg[1] has recorded the results and action of influenza in the Asylum at Aarhus, Denmark, of which Pritchard has prepared a summary for the *Review of Insanity and Nervous Disease*, for December, 1891. The disease appeared in the asylum January 4th, a few weeks after it had first been observed in the neighborhood. Of 520 insane, 41 were so severely attacked that they were confined to their beds. The disease seemed decidedly contagious. It spread with difficulty, as the wards were divided one from another. Eight of the twenty-five wards were spared altogether. When a ward was invaded, the disease would rapidly run its course, to proceed to another. The transmission of the contagion could be distinctly observed in the sick wards to which those stricken down in the other wards would bring the disease and transmit it to patients. Seven patients had pneumonia. A relatively large percentage (six) died; four deaths were from pneumonia. The most constant pathologic lesions were extreme hyperemia of the cranial bones and membranes, the dura and the brain-mass itself in two cases presenting recent and high vascular pseudo-membranes containing small hemorrhages. The veins and arteries of the thinner cerebral membranes were greatly distended with blood; the large basal arteries were so filled with coagula that they stood out like cords, or like those of an injected specimen. The brain-substance itself was hyperemic and its consistence increased. The average weight of the brains was about the ordinary weight of those of Aarhus.

In the case of a sane nurse that died of pneumonia complicating influenza, there was great hyperemia of the brain and its membranes, yet not so pronounced as in the cases fatal in the insane. In a few cases in which influenza was accompanied by severe psychic symptoms, the condition resembled acute delirium. The symptoms are, however, transient, and seem easily controlled by antifebrin. On the other hand, in two hopeless cases of insanity, influenza had such a favorable and curative action that they may be regarded as cured. In both cases there was pneumonia.

Epidemic influenza has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest have been abnormally prevalent. The hysterical have become more hysteric; the neurasthenic more neurasthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been impressed upon the community. We cannot afford even to dismiss entirely from consideration the bearings of the epidemic upon the increase not only of suicides, but of other grave crimes.

The use in influenza of hypnotics, narcotics, sedatives, and motor depressants is a question of particular interest in connection with the study of the nervous and mental phenomena of the disorder. The views of practitioners and writers are here decidedly at variance. Serious mental and nervous complications, or actual insanity occurring during influenza, have been attributed to the too free use of such chemically powerful remedies as phenacetin, antipyrin, antifebrin, chloral, bromides, sulfonal, and paraldehyde; and our older narcotics, such as opium, hyoscyamus, conium, and cannabis Indica, have also come in for a share of blame. Persisting conditions of nervous prostration, and chronic respiratory and cardiac neuroses, have also been charged to drugs. Undoubtedly, such criticisms have some foundation, but it remains true that each of the

[1] Helweg: Hosp. Tidende, R. 3, Bd. viii, S. 729.

remedies named has proved itself of some value in the treatment of influenza, and particularly of its nervous types. The enormous consumption of a drug like antipyrin is a practical argument both for and against its use. What Grasset has said of this remedy might with almost equal truth be said of almost any of the rest. "This agent," he says, "vaunted by some as a panacea for all the manifestations of the disease, is considered by others a remedy absurd and irrational in all cases. The truth would seem to reside between these two extreme opinions."

IN RE HYDROGEN DIOXIDE.

BY SAMUEL S. WALLIAN, A.M., M.D.,
OF NEW YORK.

THE medical press, both at home and abroad, has of late frequently devoted considerable space to discussions concerning the value of this by no means new, but quite unique and not very well understood, product of the laboratory, considered as a candidate for antiseptic, disinfectant, and germicidal honors; yet, in giving their experience, few writers have taken the pains to furnish anything like definite details as to its chemical nature and reactions, or any practical rules for testing either its purity or volumetric strength. Some years ago I had the honor to read a paper on this agent before the Medical Society of the State of New York,[1] which was listened to with somewhat less than the proverbial apathy of such over-bored annual gatherings, not on account of any unusual literary or scientific merit, but from the novelty of the subject. Very few members of the profession in this country had at that time given the subject any attention whatever, and very many are still unaware of the great value and prospective importance of this as yet unofficinal preparation, in its possible relations to hygiene, prophylaxis and therapeutics. The popular and pharmaceutically prevalent name, *peroxide of hydrogen*, under the chemical nomenclature of to-day is a palpable misnomer and ought to be summarily dropped. It will, doubtless, cling to the product until manufacturing chemists cease to use it on their labels. The compound is a dioxide or binoxide—water being a monoxide—of hydrogen. It is, therefore, *oxidized water*, French authorities still retaining the name "*l'eau oxygenée.*"

The chemical affinity artificially induced between water and the extra equivalent of oxygen, which transforms it into hydrogen dioxide, is not a strong one, but is rather easily broken up by a variety of comparatively slight causes. Hence the proverbial instability of the product. In a pure or, rather, undiluted state, it can scarcely be handled at all, the slightest cause, such as moderate elevation of temperature, agitation, metallic contact, and other accidental and apparently trivial agencies precipitating its decomposition into water and free oxygen, sometimes with explosive violence. By such decomposition it is found to yield 475 times its own bulk or volume of liberated oxygen. Pure, undiluted hydrogen dioxide is, therefore, called 475 volumes strong, and the strength of any solution or dilution of it is estimated according to the volumes of oxygen it will yield when entirely decomposed. Practically, it is found that a solution stronger than from 3 to 4 per cent. (about from 14 to 19 volume) is as strong as can, with our present chemical knowledge, be made reasonably stable. In a therapeutic sense it is quite as strong as is ever required—in fact, even this strength needing to be much further diluted for most clinical uses.

The market is now tolerably well supplied with indifferently good and wretchedly poor varieties, a really ideal product being hard to find. It would seem that as the article has increased in popularity manufacturers have grown either careless or mercenary, and have allowed their product to deteriorate in quality. Competition, it would appear, has not yet reached a stage in which quality is of greater moment than quantity; but as the profession learns to discriminate, the inferior varieties will fall into deserved disrepute and be driven from the market. For the most part the current medical journal literature on the subject is so transparently instigated, or at least influenced, by "trade" bias that it commands comparatively little professional confidence, and many who have been theoretically convinced that the article itself has intrinsic therapeutic value have been discouraged from continuing its use on account of the difficulty of procuring a preparation possessing the requisite degree of purity and stability. In a purely economic sense, instability is a prime obstacle to the general introduction and ultimate popularization of this article in medical and surgical practice. To be always trying to remember the stereotyped precautions of tight corking, cool storage, and seclusion from light, is always irksome and frequently impracticable; while to find, at a critical juncture, too late for rectification, that a quondam fifteen-volume solution, from having been set aside for a few weeks, has degenerated into a three-volume or five-volume solution, is not only very aggravating, but in all probability compels a resort to less satisfactory substitutes. To the painstaking and inquiring surgeon this is a loss, not only of substance but also of opportunity. If to its delusive instability is added a decidedly irritating quality from retained impurities, it is little

[1] Trans. N. Y. State Med. Soc., 1885, p. 94–99.

wonder that many practitioners and impatient experimenters have almost wholly abandoned its use.

The commonest impurity noted in samples of H_2O_2 is hyperacidity. The pure product itself has a slightly acid reaction, reddening sensitive litmus paper; but the presence of free acid in appreciable quantity is a serious fault, whether the agent is to be used internally or externally. Most manufacturers purposely acidify the solution, and they do this on the theory that it is necessary in order to secure a stable article. This theory is, in reality, a chemical absurdity and delusion. Every reflecting chemist must admit that the presence of free acid in any compound solution is a menace to the permanency of its chemical composition, especially if there be present at the same time traces of earthy or mineral salts. Again, if these salts be present in any such solution, then a certain percentage of free acid becomes a necessity in order to prevent their precipitation. In any solution containing both mineral compounds and a free acid or acids, the inevitable tendency is to further chemical reactions and a resultant change in the chemical relations of the solution. This may be an unwritten law as regards text-books, but it is based on the general law which underlies all chemical facts. Thus, the salts of barium, incident to its manufacture, when not thoroughly eliminated from a given sample of hydrogen dioxide, call for a certain proportion of some free acid, in order to render the solution clear and free from a tendency to unsightly deposits. Some manufacturers resort to various expedients to render their product unusually brilliant and attractive in appearance. Sulphate of aluminium is the least harmful, and oxalic acid the most objectionable, of the many contaminations used for this purpose.

Until manufacturers of this compound cease to resort to laboratory subterfuges to cover up the shortcomings of their wares, we shall continue to encounter impure, unstable, and irritating preparations, notwithstanding the fact that they may be widely advertised and loudly labelled "medicinal," "strictly standard," "chemically pure," etc. Dr. B. W. Richardson, who has done more than any other writer to make known the valuable properties of H_2O_2, now insists[1] that acid, and otherwise impure solutions, are no longer tolerable—in other words, that the chemists must give us a genuinely neutral product, and one that will not deteriorate as to volumetric strength from other than extraordinary causes. This is not an unreasonable demand. Chemistry is a rapidly progressive science. Our synthetists fabricate quinine, saccharin, and an endless list of antiseptics and antipyretics from simple coal-tar. Our analysts split the most obscure ptomaïnes, glucosides, and alkaloids into their ultimate elements. Why should they blunder, or be only partially successful, in their efforts to combine the two commonest elements in nature?

In this connection it is no exaggeration to say that those manufacturing chemists who essay to make peroxide of hydrogen, and who are so eager to control and extend the trade in this product that they lose sight of the maxim, *In medicine only the best is good enough*, will learn, too late perhaps, that they have ruined their own market. In other words, if this bland but unique and powerful agent is to become widely known and permanently popular with either physicians or surgeons, its promoters and fabricators must cease to rely on "chemically pure" label assertions, and give to the profession a uniform preparation that is at once practically non-acid, of definite and reliable strength, and that can be retained, without rapid deterioration, under ordinary office temperatures and conditions.

This unquestionably involves the most exact manipulation and an unusual degree of chemical vigilance; but it can be done, since it has been done, and the perfect and finished product is certainly worthy the pains. The spirit of the profession is growing intolerant of anything short of the best results that pure chemicals, trained knowledge, and the most rigid accuracy in manipulation make it possible to produce. There is quite enough inaccuracy and uncertainty in the practice of medicine without any crudity or carelessness in the matter of pharmaceuticals.

To test any sample of hydrogen dioxide with sufficient accuracy for all practical and clinical purposes requires but little apparatus and a modicum of chemical tact. Every physician can make his own tests with little trouble and less expense. The requisites include a few test-tubes; a pipette holding, or at least graduated to measure, 1 c.c.; a cylindrical graduate, marked in c.c.; a glass or porcelain bowl, with a capacity of a pint or more; a small glass rod, or piece of glass tubing, for stirring; strong aqua ammoniæ, phosphoric and sulphuric acids, and a standard solution of permanganate of potassium, one part to 250 of water.[1]

Certain preliminary tests can be promptly made by the aid of the senses, without any apparatus. Thus, on opening a fresh sample of the article, if the cork be ejected with force, as if the bottle contained soda-water or champagne, it is proof positive that the contents are in a state of decomposition, and it is *prima facie* evidence that the sample contains either

[1] London Lancet, March, 1891.

[1] It is directed that 1.852 gram of permanganate be dissolved in 500 c.c. of water, which corresponds with 1 part in 270, and will, of course, indicate a proportionately greater strength in any sample tested.

free acid or some form of impurity, or both. Holding the bottle to the light, the constant rising of minute bubbles of gas to the surface will confirm the foregoing evidence, and indicates decided instability. The presence of certain free acids will be evident to the sense of smell, but particularly so to the taste. Pure H_2O_2 is not distinctly acid to the taste, but imparts a sense as of metallic contact, or of mild galvanic action. By comparing several samples the differences will be very apparent. One liter of a fifteen-volume solution should be entirely neutralized by 6 c.c. of a 10 per cent. normal solution of ammonia of 20° Baumé. If more than this is required to prevent decided reddening of blue litmus paper, either free or combined acid is present.

The volumetric test is as follows: To half a pint or more of water contained in the glass or porcelain vessel mentioned, add twenty or thirty drops of sulphuric acid; then with the pipette add exactly 1 c.c. of H_2O_2, stirring the mixture thoroughly with the glass rod. Fill the cylindrical graduate (which should read downward) up to zero, with the standard solution of permanganate of potassium, and pour from it slowly into the bowl of accidulated water containing the H_2O_2 to be tested, stirring the mixture rapidly until the color of the permanganate is no longer discharged, taking pains not to add more than a drop or two beyond the exact quantity required. The number of c.c. of permanganate solution used indicates the volumetric strength of the sample. Thus, if in a given case 10 c.c. of permanganate solution is decolorized by 1 c.c. of H_2O_2, the latter is said to be of ten volumes strength. In other words, such a sample, on being completely decomposed, will yield ten times its own bulk or volume of free oxygen.

To detect the presence of barium and other earthy compounds, which, as a rule, are but imperfectly removed by even the most reputable manufacturers, here or abroad, proceed as follows:

To half an ounce or more of H_2O_2, in a perfectly clean test-tube, add a few drops of phosphoric acid, to favor perfect solubility. Shake well, and then add ten or fifteen drops of strong aqua ammoniæ. On agitating the mixture effervescence will occur, and oxygen will be somewhat rapidly liberated. If there be appreciable quantities of earthy salts in the sample it will turn decidedly milky, and on standing will precipitate a flocculent deposit, which will be more or less abundant, according to the degree of impurity. This test will be more thorough and reliable if the solution be heated nearly or quite to boiling-point before adding the ammonia. If neither a cold nor a hot solution thus treated shows the cloudiness or deposit, it may be considered free from any notable quantity of chemical salts. This test is by no means quantitatively accurate, but it answers for practical purposes, and applies equally well for the detection of nitrates, sulphates, phosphates, or chlorides.

As a practical application of the foregoing, I have before me five different brands of the so-called "peroxide of hydrogen." Four of them are of American and one of German manufacture. Three of them claim to be "chemically pure," and fifteen volumes strong. One is marked ten volumes, and one makes no claim as to strength or purity. To secure exact fairness in the test, all the samples were freshly procured.

No. 1 bears the foreign brand, is put up in an amber bottle, and marked ten volumes. On releasing the cork it is ejected with moderate force, and fine bubbles of gas are seen to rise. The permanganate test indicates a strength of eight and a quarter volumes. The ammonia test, cold, throws down an abundant flaky deposit, as if one had added tincture of camphor to cold water.

No. 2 is contained in a long-necked bottle, similar to an Apollinaris bottle, the sample having ample space above the liquid, which space, the label asserts, is "necessary for expansion." It is marked "fifteen volumes, medicinal." On releasing the strongly wired-down cork it is forced out with a distinct report, and effervescence is brisk and constant. The taste is sharply acid, and holding a teaspoonful in the mouth for a time fairly sets the teeth "on edge." The permanganate test shows thirteen and a half volumes, and the cold ammonia test instantly changes the previously clear and beautiful solution into an opaque, milky fluid, which soon throws down a copious, flocculent deposit.

No. 3 is contained in a common amber glass bottle, full to the neck, and claims to be fifteen volumes in strength, and "free from hyperacidity and earthy salts." There is no force behind the cork, and the appearance of the liquid poured out into a clean test-tube is not as brilliant as the last-mentioned sample. The taste is metallic, but not acid, although the sample reddens sensitive litmus. The permanganate test shows seventeen volumes strength, and even on heating the solution the ammonia test causes no perceptible cloudiness. It is apparently an unexceptionable product, which proves that there is no insuperable reason why all the others should not be equally good.

No. 4, contained in amber glass, bears the imprint of a heavy and highly reputable wholesale drug-house, but claims nothing as to volumetric strength, purity, or medicinal qualities. It tests barely one and a half volumes, and contains a marked percentage of free acid and of chemical salts. It is the poorest, not to say vilest, of all the samples tested.

No. 5, put up in flint glass, ejects its cork with

force, and while it is a beautifully clear and brilliant preparation, is sharply acid to the taste; it claims to be a "standard" solution, fifteen volumes strong, and tests but twelve volumes. The cold ammonia test produces no milkiness, but on heating the solution a slight cloudiness appears. This sample seems to be fairly good, except that it decidedly lacks stability.

Thus it will be seen that there is a wide and seemingly inexcusable margin of difference between these various samples, but two of them being passably good, and but one of them bearing out the claims contained in the attached labels and circulars. That anything like uniform or satisfactory therapeutic results can be expected by an indiscriminate use of these several brands is absurd. On the contrary, it is surprising that so many physicians and surgeons have been able to report favorably concerning the use of an agent that averages so bad a record in the direction of careless or unscientific preparation.

THE USE OF GOLD AND MANGANESE IN TUBERCULOSIS.

BY O. H. MERRILL, M.D.,
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THIS report is based upon five months' experience in the use of hypodermatic injections of gold and manganese in cases of pulmonary tuberculosis. Ten patients have now been under observation for a sufficient length of time to enable at least a provisional opinion to be formed as to the value of this method of treatment, as advised by Dr. Blake White. Other cases, in which only a few injections were made, or which, for some cause, could not be followed, will not be considered here. Over 350 injections have been given, of which one patient received ten, another fifty-eight, while the others had between thirty and forty each. The rules laid down by Dr. White in his original publication have been followed as closely as possible, and it may be said that, in general, his statements have been confirmed. The use of the remedy does not require any special skill, and is not attended by any particular danger, if proper precautions and care are taken.

The injections were made in the arms and legs with an ordinary hypodermatic syringe provided with a very fine needle. No abscess has been caused, and only occasionally has pain or swelling followed. In only one case was there any unpleasant "reaction," namely, increased cough, with bloody expectoration. This, however, was slight, subsided in a few hours, and did not reappear on further use of the remedy in slightly diminished doses. The patients have all followed their usual occupations while undergoing the treatment. For the sake of brevity, the detailed histories of the cases will not be given. The diagnosis was established beyond a doubt by modern methods. Before beginning the injections, all the patients had been treated for some time, with rather indifferent success, by means of special diet, hygiene, creasote, and in a few instances, cod-liver oil. These various measures were also continued during the period in which the injections were used.

The first patient to receive the gold and manganese treatment was a machinist, twenty-five years of age, with incipient phthisis.

In spite of six weeks of active treatment, there was an evening temperature of 99½°, a pulse of 84, and considerable cough. As these symptoms showed the usual tendency to persist, it was decided to use the injections. In less than three weeks every symptom had disappeared, and now, four months afterward, he is apparently well. He declared that the injections cured him, but, of course, the declarations of patients can have little weight in such matters.

In the case of a woman, thirty-two years of age, with advanced disease of one lung of eighteen months' standing, the remedy seemed to arrest her downward course very promptly. After two months of faithful use an intermission of a fortnight was ordered, at the end of which time she returned much worse and begged to have the remedy administered again. Her request was granted, whereupon she rapidly improved once more. There seemed in this case to be some probability that the special treatment really had the good effect that she attributed to it.

The other eight patients were in the first stage of pulmonary tuberculosis, with distinct, though not extensive, consolidation of some part of one lung. The improvement was well marked in every case after from ten to twenty injections had been given. Appetite, weight, pulse, temperature, cough, and sweating all showed changes in the right direction. Several of these patients declare themselves well, and refuse further treatment. That they are not well is shown by a slight elevation of pulse and temperature in the evening, by a slight morning cough, and by the occasional presence of a few bacilli in the scanty sputum. These symptoms, together with a certain degree of dulness on percussion, make it sufficiently plain that further treatment is needed. It must be admitted, whatever the final results may be, that the changes in their condition have been remarkable and altogether unexpected. That most of them will relapse seems highly probable from the fact that they have not sufficient intelligence to continue systematic treatment, and from the fact that owing to lack of means they cannot have the benefit of favorable climatic influences. What the result might be with continued medical care in

a suitable climate cannot, of course, be definitely stated.

The wild and baseless announcements that have had premature delivery during the past year show how difficult it is for even well-trained minds to draw correct conclusions in regard to therapeutics. They show, furthermore, that proclamations from the laboratories may as well be tested clinically before acceptance.

In attempting to form a correct opinion in regard to the value of this mode of treatment, reliance is placed chiefly, but not entirely, upon the results obtained this year with the combined treatment as compared with the results obtained during the past ten years with an entirely similar series of cases treated without the injections. This comparison is very favorable to the new treatment. An improvement that required six or eight months to bring about in former years, has been obtained this year in as many weeks. Symptoms that were formerly very obstinate, and that were removed with the greatest difficulty, have this year yielded quickly. One of the most gratifying effects of the remedy was seen in the increased appetite that sometimes manifested itself within a week—nearly always in two weeks. Although, on account of the small number of cases treated and the short time they have been under observation, it is impossible to make any complete demonstration, yet it seems probable that, after all the deductions that strict logic requires have been made, the remedy has considerable power to ameliorate the condition of tuberculous patients, and in incipient cases, perhaps, to do more. While we have here no specific, we have a remedy that, when used carefully in connection with other means, is capable of doing excellent service, thus constituting a distinct advance in the therapeutics of tuberculosis.

CLINICAL MEMORANDA.

A CASE OF TUMOR OF THE MID-BRAIN AND LEFT OPTIC THALAMUS.

BY JAMES HENDRIE LLOYD, M.D.,
PHYSICIAN TO THE NERVOUS AND INSANE DEPARTMENT OF THE PHILADELPHIA HOSPITAL, TO THE METHODIST EPISCOPAL HOSPITAL, AND TO THE HOME FOR CRIPPLED CHILDREN.

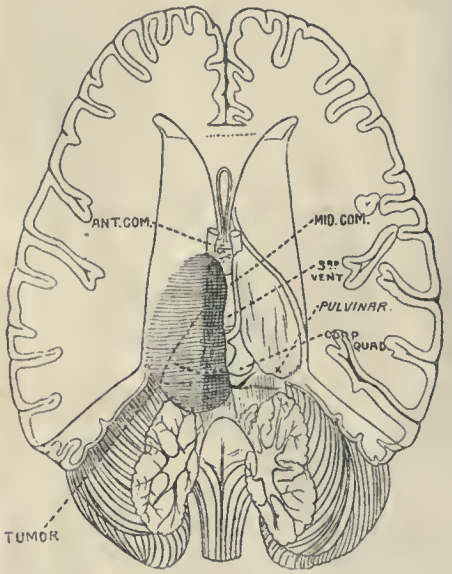
THE patient whose case I report was admitted to the Philadelphia Hospital on May 13, 1891. A very brief and imperfect history was obtained from his sister. They were Italians, with very little knowledge of English. C. B., male, aged twenty-eight, Italian laborer, was taken ill six weeks before admission to the hospital. His first symptom was paralysis of the right arm; fifteen days later he complained of severe headache on the left side; at the same time his left eyelid began to droop. No other details of any importance could be obtained from the sister.

Condition on admission. The patient's attention could be attracted, but was held with difficulty. This hebetude continued throughout the case, toward the end deepening into a light coma. The left third nerve was paralyzed, as shown by ptosis and external strabismus. The pupil was immobile, but at this time not dilated. The right arm was completely paralyzed; the right leg was paretic, but not completely paralyzed, as the patient, by repeated urging, could be induced to move it. The left arm and leg were not paralyzed and never became so. The patella-reflex of the left leg, however, was exaggerated and there was slight ankle-clonus. Neither of these were present on the right or paralyzed side. The case thus presented a crossed paralysis, the left third nerve being involved, with right brachial monoplegia and right crural monoparesis. The face and tongue were not paralyzed on either side—in fact, from beginning to end no paralysis of the fourth, motor branch of the fifth, the sixth, the seventh, or any other cranial nerve than the third was observed. The patient chewed his food mechanically and swallowed without difficulty.

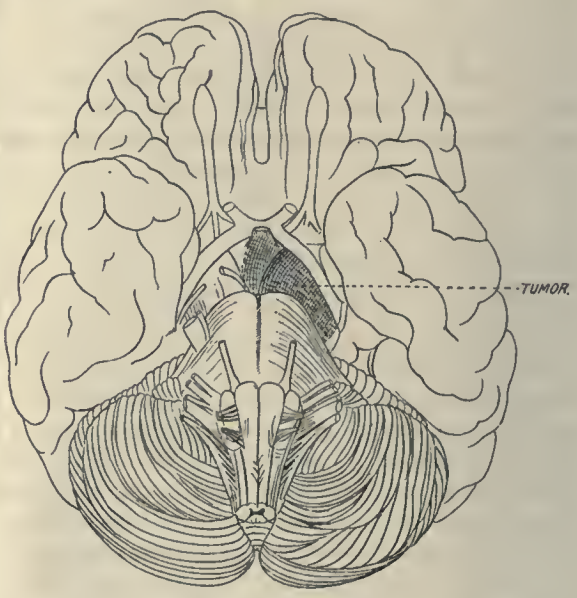
An Italian interpreter on one occasion said that the patient's speech was not "straight," but this defect was apparently not a true aphasia. The patient vomited occasionally, but vomiting was never a marked symptom. The bladder was not paralyzed. The sensory tests were not at any time satisfactory, owing to the patient's hebetude. Some interesting observations of a rather unusual kind, however, were made. There was no apparent anesthesia of either side, so far as the patient's mental condition allowed of a test. There was, however, an active reflex to sensory irritation. This reflex was free on the left side and was excited by irritation of the skin of the right leg; in other words, there was a transmitted reflex on the left or unparalyzed side from sensory irritation of the right side. Irritation over either the right or the left eye caused a reflex movement in the left or unparalyzed leg. The reflex to painful impressions was more marked in the upper part of the face than in the lower part of the face and showed itself by jerks of the arm and leg. The patient's hebetude gradually increased; he complained of pain in his head, and held his hand to his head as if in pain. Occasional vomiting was noted. He was very restless and delirious at night. Examination of the urine showed a very slight trace of albumin. At the end of the first week the patient had some difficulty in swallowing; his right leg became more paretic, and he could be aroused with difficulty. This general condition, continued, with increasing hebetude, occasional vomiting and constipation of the bowels. The paralysis of the third nerve and of the right arm and leg continued unaltered. The left pupil became more dilated. The right third nerve never became involved, which, considering the site of the tumor, is rather remarkable. Later, the right face became possibly a little flattened. Three weeks after admission conjunctivitis in the right eye was noticed, with increased lachrymation, but the movements of the eye were unimpaired. Sensory tests of the right eye were not satisfactory. It was thought, however, that the conjunctivitis may have been neuroparetic in origin, as there seemed to be loss of sensation of the conjunctiva of this eye. There was also an abrasion of the conjunctiva of the right eye over the lower part of the cornea. The eyes were

washed with a solution of boric acid and eserine. Two days before death the pupil of the right eye was contracted to a pin-point, while the pupil of the left eye was much dilated. Just before death the patient had a clonic spasm of the left leg. He died on the twentieth day after admission.

Autopsy. The autopsy revealed a tumor of the left optic thalamus and the mid-brain, involving the left cerebral peduncle. The left cerebral peduncle was



Tumor, involving left optic thalamus and left half of mid-brain. (Seen from above.)



Tumor, involving left crus and extending forward and inward, involving and effacing corpora mammillaria.

enlarged and the left third nerve was displaced by the growth. The right peduncle and the right third nerve were normal. The tumor extended forward, involving and obliterating the corpora mammillaria. The optic tract was slightly flattened and broadened. On laying open the brain-axis, by carefully removing the corpus callosum and the arch of the fornix, the tumor was seen to extend forward and to involve a large part of the left optic thalamus, which projected far across the third ventricle; it also projected up into the lateral ventricle. The aqueduct of Sylvius was pervious. On section, the growth was seen to be a soft, highly vascular, infiltrating tumor. A section was prepared by Dr. Stengel, and the growth was found to be a glioma.

It seems impossible for this tumor not to have involved the sensory tracts to a greater extent than was demonstrable at the bedside. For instance, the patient probably had had hemianopsia. Careful tests were made to detect this condition, without satisfactory results, owing to the impaired mental condition—so, too, the tests for tactile and painful impressions could not be relied upon. The prominent symptoms were the crossed motor paresis, the headache and hebetude, increasing to coma. It is especially notable that the patient at no time had an epileptic convulsion, and that the vomiting was infrequent and not characteristic.

Temperature. The patient had a remarkable course of subnormal temperature, the lowest point reached being 95.4°. The temperature was subnormal for twenty days, with two exceptions, when it rose to not quite 100°. There was a difference between the temperature of the two sides, the temperature of the right or paralyzed side being usually from one and a half to two degrees higher than that of the other. Three days before death the temperature began to rise; just before death it registered 106.1°. I have noted subnormal temperature in one other case of brain-tumor. There was no vasomotor paralysis, unless the difference in in the temperature of the two sides indicated such. There was no unilateral sweating. The bladder-symptoms, as involuntary passage of urine, could be explained by the patient's mental condition.

A diagnosis of tumor of the left cerebral peduncle was made at the first examination.

I am indebted to Dr. Frances S. Janney, resident physician, for careful notes of the case.

A PECULIAR CASE OF PROBABLE PERFORATION OF THE APPENDIX VERMIFORMIS.

BY M. ROSENHEIMER, M.D.,
OF MILWAUKEE, WIS.

ON August 9, 1891, I saw Max R., aged fourteen years, of German parentage. He had had several loose passages, after which pain developed in the umbilical region. There was marked tenderness in the ileo-cecal region, vomiting, and considerable tympanites. The temperature was 99.5°, and pulse 110. Not being able to come to any definite conclusion, I administered a dose of morphine, which afforded relief. On the following morning, the condition of the boy being about the same as on the previous day, I ordered thirty grains of calomel, in divided doses, to be followed by a dose of castor oil, if the bowels did not act in six or eight hours. In the afternoon of the same day, the bowels had not moved;

there was considerable pain, and tympanites was greatly increased. I gave an injection of warm soap-water, bringing away a small quantity of light-yellowish fecal matter. Vomiting being now quite obstinate, I gave small doses of morphine and belladonna.

I made a diagnosis of bowel-obstruction, and asked for counsel. Dr. Earles saw the patient with me, and concurred in the diagnosis. The parents were informed of our conclusion, and an operation was proposed. They consented, but, as a last resort, several doses of compound jalap powder, each of one dram, with five grains of calomel and one-quarter grain of elaterium, were administered, with no result.

On the following morning the patient was removed to Trinity Hospital, and prepared for operation. However, just previously to the time set for the operation, he went to stool, and had a copious liquid movement, with considerable relief of the pain and tympanites. He was ordered magnesium citrate one dram every hour for six hours. He had several more liquid movements and felt easier, with decided tenderness, however, still present in the ileo-cecal region. He returned home. I saw him again on the following day. His pain had increased and his temperature was 100.5°, pulse 120. He received small doses of anodynes, and his condition not improving, a collection of pus was suspected, and the propriety of its evacuation suggested to the parents. After some hesitation, their consent was granted. At about this time, another medical gentleman was incidentally called in, who pronounced the case one of peritonitis, and advised a radical change of treatment. His advice, however, was not accepted, and on the following day, the patient having again been removed to the hospital, I made an incision over the cecum, and when the peritoneum was reached a hypodermatic needle was inserted. Pus having been found, an opening was made, and about an ounce was evacuated.

The pus had no fecal odor, and was confined in a cavity in which neither foreign body nor the appendix was found. Drainage was provided for and an antiseptic dressing applied. The patient did well until the fifth or sixth day, when there was a reappearance of the symptoms that had existed—obstruction, pain, tympanites, elevated temperature, and accelerated pulse-rate. The pain was localized in the hypogastric region, about an inch to the right of the median line. The boy was anesthetized, an incision was made and about two ounces of fecal-smelling pus were evacuated. A large drain was and the patient was put to bed.

He again did well for a week and we began to consider our troubles over, when the old symptoms reappeared, the pain being now localized in the left groin. Unyielding constipation again existed and there was great tympanites. The temperature rose to 102.5°; the pulse was 144 and weak. The pain was severe, and collapse seemed imminent. The patient was given hypodermatics of morphine and was vigorously stimulated. Magnesium sulphate was also administered every two hours.

On the following day (Sunday), two weeks and four days after the first operation, the condition of the boy having somewhat improved, he was again anesthetized and an incision was made, evacuating about one ounce of pus, having no fecal odor. At the same time the middle wound was dilated, and we tried to force water from the old into the new opening, but not the slightest communication existed.

The patient reacted well from the third operation and has steadily improved up to date (October 1st), at this time being completely restored to health.

REMOVAL OF TUMORS OF BOTH OVARIES.

By ALEXANDER FULTON, M.D.,
OF PHILADELPHIA.

THE patient was Mrs. E. H., of Minneota, Minn., who came to Philadelphia to have the operation performed. Several days after her arrival, which was on the 3d of last October, after a continuous journey of two thousand four hundred miles, her symptoms were such as to imperatively demand the operation, which was done on October 13th. Observing thorough antiseptic precautions, I made an incision about three inches in length, and in depth to the aponeurotic tissue. When hemorrhage had ceased, I placed the woman on her left side and made an opening into the peritoneum. There was now a great gush of ascitic fluid. The peritoneum was incised, and a tumor of the right ovary presented. I tapped the tumor in several places, but it was still so large that I had to extend the opening four inches more. The tumor was free, and, bringing it through the opening, I transfixed the pedicle with carbolized silk and excised the tumor, which weighed thirteen pounds.

The tumor of the left ovary presented grave operative difficulties. It also had to be tapped in several places, and even after this it was of enormous size. It was adherent to the walls of the abdomen, and to the intestines, and its pedicle was very thick and contained large vessels. I detached the adhesions with my finger and the scalpel, taking great care to cut toward the tumor. I then transfixed the pedicle as in the case of the right ovary. All this time the woman was on her left side, an assistant holding the intestines in the cavity with his hands. There was but little fluid in the cavity, which I swabbed out with a small antiseptic sponge, and, without irrigation, I turned the woman on her back again, closed the wound by suture, dusted it with iodoform, covered it with sublimate gauze, padded it with absorbent cotton, and bandaged it moderately tight. Only liquid food was allowed for about a week, viz., milk, beef-tea, and brandy. Neither the bowels nor the bladder called for interference, as they moved nicely of their own accord. There was no hemorrhage or rise of temperature, and only slight increase of the frequency of the pulse. There seemed to be complete union on the tenth day; but, as the sutures caused no trouble, I permitted them to remain until the fourteenth day, when I removed them and applied an abdominal supporter, and allowed the patient to leave her bed. She has been able to get up ever since, and at the present writing has fully recovered. The tumors and fluid weighed seventy-three pounds. Immediately after removal, the tumor of the right ovary weighed thirteen pounds, and that of the left nine pounds.

The history of this case case will afford valuable information as to the detection of ovarian tumors. About six months ago this woman observed a small lump about the size of a hen's egg, on the left side. A few days after

its appearance there was a circumscribed swelling, so that the lump could not be discerned, and several weeks afterward the swelling extended over the entire side. Thus far she experienced only slight soreness. About three weeks afterward she noticed a small lump on the right side; it also was movable, and swelling similar to that upon the left side ensued, during which time she for several days suffered excruciating pain. This swelling continued until it became as large as that upon the left side, so that the abdomen attained an enormous size.

Mrs. H. is thirty-eight years of age, the mother of one child, a girl five years of age. She is a slender-built woman; in health her weight never exceeded one hundred and thirty-five pounds.

MEDICAL PROGRESS.

Successful Trephining for Basal Hemorrhage.—SMART (*British Medical Journal*, No. 1614, p. 1204) has reported the case of a woman, forty-three years old, in which, following a blow upon the right parietal bone, the face became drawn to the right. There was no ptosis, no ocular deviation; the pupils were of moderate size, nearly equal, and they reacted fairly well to light; but there was left lateral hemianopsia. Motility and sensibility were impaired upon the left side of the body. Coma, with Cheyne-Stokes respiration, developing, two trephine openings were made, one at the seat of injury, the other a little anteriorly and inferiorly. There was free hemorrhage from the membranes, but no cause for the symptoms was found within reach of the director or finger. By exclusion, the original diagnosis of a right basal lesion appeared to be confirmed. At once, when the dura was incised, the breathing improved, the relief of pressure and tension being indicated by the occurrence of cerebral hernia. Subsequent improvement was progressive, the hemiplegic symptoms in some degree, however, persisting. A year after the accident there had been no relapse.

Aneurism of the Renal Artery.—OESTREICH (*Berliner klin. Wochenschr.*, No. 42, 1891, p. 1042) has recorded two cases of aneurism of the renal artery. One occurred in a woman, fifty years old, who, three months before death, had had an apoplectic seizure. Twelve days before death intermittent hemorrhage from the bladder set in. There were severe pains in the abdomen and a tumor could be felt in the situation of the left kidney. A diagnosis of malignant neoplasm of the left kidney was made. At the autopsy, in addition to several areas of softening in the brain, an aneurism of a branch of the left renal artery was found. The surrounding retroperitoneal tissues were infiltrated with blood, and the pelvis of the kidney was filled with coagula.

In the second case, which occurred in a young man who died of multiple embolism in association with malignant endocarditis, the aneurism involved the right renal artery and had occasioned no symptoms.

Successful Trephining for Abscess of the Temporal Lobe.—At a meeting of the Berlin Medical Society, BAGINSKY and GLUCK presented a five-year-old girl, in which, following the introduction of a pea into the left ear, suppurative otitis media, with perforation of the tympanic membrane, developed. In the course of a few weeks the pulse became slow and irregular, while headache, retraction of the abdomen, twitching of the extremities, and somnolence appeared. Subsequently the left pupil became smaller than the right, though both reacted to stimuli. There was no derangement of vision and no paresis of the upper extremities. The symptoms became threatening; the head was trephined; an abscess was found in the left temporal lobe. A little more than three ounces of pus was evacuated. The cavity was packed with iodoform gauze. The subsequent course of the case was uneventful, recovery ensuing.

Chlorine in Typhoid Fever.—YEO (*Lancet*, Nos. 3528 and 3529, 1891) has recommended free chlorine as the best agent for the antiseptic treatment of typhoid fever. Forty minims of pure hydrochloric acid are added to thirty grains of potassium chlorate in a flask and chlorine permitted to generate. In two or three hours water is gradually added, and the tightly closed flask is thoroughly shaken. Then sufficient water is added to make ten ounces. The result is an almost perfect solution of chlorine. To twelve ounces of this solution are added from twenty-four to thirty-six grains of quinine hydrochlorate and an ounce of syrup of orange-peel. In accordance with the severity of the case, an ounce of the solution may be administered two, three, or four times a day.

Gastrostomy in Stricture of the Esophagus.—At a meeting of the Glasgow Medico-Chirurgical Society, KNOX (*Glasgow Medical Journal*, 1892, xxxvii, 1) presented a man forty-eight years of age, who for seven months had had progressively increasing difficulty in swallowing, and loss of flesh. On examination, a stricture of the lower portion of the esophagus, impassable to a bougie, was found. As it was feared that the obstruction would ultimately become complete, gastrostomy was performed, the stomach first being sutured to the abdominal parietes, and, after an interval of a week, incised. Not only was it an advantage to be able to successfully nourish the patient through the artificial opening, but it was found that as a result of functional rest swallowing became considerably easier.

Thyroidectomy in Exophthalmic Goiter.—CAIRD (*Edinburgh Medical Journal*, September, 1891) has reported the case of a man, twenty-five years old, with a large cystic goiter, palpitation, dyspnea, dysphagia, protrusion of the eyeballs, and increased frequency of pulse, in which, a year after excision of the large cyst and the right lobe of the thyroid gland, the patient felt perfectly well, the eye no longer protruded, the pulse was less frequent than formerly, and there was no discomfort or dyspnea.

Pseudo-tuberculosis.—At a meeting of the Société de Biologie, CHARRIN (*La Médecine Moderne*, No. 43, 1891, p. 745) reported a case of granular tuberculosis, in which, post mortem, lungs, spleen, and liver contained large numbers of gray granulations, in which tubercle-bacilli could not be found. Animals inoculated from the granulations died and presented similar lesions, in which were found bacilli that stained by ordinary methods.

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THE EMPLOYMENT OF EPILEPTICS.

THERE is in this country no right provision made for many classes of people abundantly willing to labor for their own support, but who, by reason of partial and occasional disablement, are unfitted to compete in the open labor mart. These are the victims of many different maladies, but especially those suffering from one of the most unfortunate of human diseases, and one that is of the most ancient origin, namely, epilepsy, or the "falling sickness." The epileptic is not specially set apart from his fellows in childhood or early youth, or if in comfortable circumstances, but the moment he applies for work, and his malady becomes known, a sharp line is at once drawn. Be he ever so intelligent or industrious, this accident of disease constantly stands like a black mark against his name. His presence is only tolerated; he is got rid of at the earliest possible moment, and the difficulty of getting other work increases in geometric ratio, until presently he is relegated to the lumber-heap of incompetents, or becomes a hopeless pauper.

In a paper read before the Philadelphia Neurological Society last year on this subject, DR. J. MADISON TAYLOR, long deeply interested in this subject, says:

"If an employer be merciful and desires to give an epileptic a job, especially if this be among machinery, and if in a fit this poor creature falls and hurts himself, the law gives him the right to sue for damages, and, unjust as this may appear, it is often done. Even in the ranks of domestic labor a female servant cannot be tolerated long who falls ever so rarely in a loathsome-looking fit.

"Thus one way or another the door to honest labor is shut. Add to these constant disappointments the highly emotional nature so often a part of the disease before and after the fit, the inevitable mental and moral weakening that the disease breeds, and the sufferer may well be looked upon, as by the ancients, as a victim of the especial and fiercely directed anger of the gods.

"Could there be had a wisely devised series of havens for such, where the worst cases might be housed and others received daily, and all employed in proportion to their powers, it would constitute a worthy charity. Charity should be clearly distinguished from alms-giving. The great petition that goes up from humanity is for opportunity. Those that have good brains must choose and plan for those that are lacking. Such a system would offer immeasurable opportunities for the study, relief, and cure of the dread 'falling sickness.'"

DR. FREDERICK PETERSON has pointed out the consequences of this exclusion of the epileptic from the ordinary occupations of humanity:

"He is driven to find shelter in an asylum, not, as a rule, because he is deprived of reason, but because there is no other place for him to go. There are thousands of epileptics in insane asylums to day who do not belong there; for many will be found among them who are not insane, and it is an injustice to them as well as a detriment to the insane to associate the two classes. When we take into consideration the fact that a large majority of these unfortunates are gifted with as much intelligence as ordinary human beings, that they are as capable of education, as well adapted for everyday pursuits, quite as able to be self-supporting as most people, their unutterable woes become more apparent. But the conditions under which they may secure their proper mental development and their need of occupation must be such as combine medical supervision with wise industrial teaching and training. It was considerations of this kind that led Pastor von Bodelschwingh, twenty-four years ago, to establish a colony for epileptics at Bielefeld, near Hanover, in Germany. For nobility of conception and for excellence of result it is unique in our civilization. It seemed to this benevolent founder that it was feasible to create a refuge where, if curable, such sufferers might be cured; where at least their condition might be ameliorated, their intellectual decay prevented; where they might find a comfortable home if recovery were impossible; where they might develop their clouded mental faculties to the utmost, might acquire trades or engage in any occupation they saw fit to choose, and finally to grow into a community of educated, useful, industrious, prosperous, and contented citizens. There has been a fair realization of this project, and there has been a gradual evolution and expansion of the colony. Now it has over one thousand epileptic inhabitants.

When I visited it in 1887 it consisted of fifty-five houses and cottages, scattered in pretty gardens over some 320 acres of beautiful woodland and meadows. It was like a country village."

At this place are schools, stores, and shops of many kinds, a foundry, saddlery, dairy, brickyard, printing-office, and bookbindery—in fact, all of the factors that go to make up a well-rounded small community. These sufferers do all the work and do it well; they build houses, make bricks for the purpose, are excellent carpenters and good iron-workers, good painters and glaziers. For the men alone there are thirty different callings. The women are busied in the manifold cares of the households, manufacturers of wearing apparel and bed-linen, and the rearers of flowers and garden products. It would be useful to further describe this admirable little community, its work and its play. A full description is given by DR. PETERSON in the *Journal of Nervous and Mental Diseases*, December, 1889. Since this colony was started, nine other epileptic colonies have been established in Germany, one in Holland, and one in Switzerland. It is admitted that in the United States there are at least two epileptics to every thousand of population; hence, in the United States there must be over one hundred thousand persons suffering from this malady. The only difficulty in speaking of this matter is not to say too much, or to speak in a manner not to seem exaggeration. That systematic methods should be pursued in caring for epileptics needs no further demonstration. That which has been done in this country is as follows: A bill was introduced in the New York Senate by DR. PETERSON through SENATOR W. L. BROWN, and is now in the Committee on Public Health. We do not know what action has been taken in this matter recently, but even if the commission be appointed for selection of site and preparation of plans for a suitable institution, the realization of the ultimate result must inevitably be long deferred. There is one institution recently established at Gallipolis, Ohio, but we are not acquainted with its details and present work. In Boston DR. WILLIAM M. BULLARD read a paper last year before a section of the District Medical Society upon this subject, and a special committee of the Massachusetts Medical Society was appointed to consider it. There, so far as known, the matter now stands. This committee proposes to introduce a bill into the next Legislature, but in regard to the details of this bill nothing has yet been decided beyond the fact that at present the cottage-hospital system seems the most commendable.

But some action should be taken more broadly than would be possible in one city or State. If this idea, clearly defined, could be brought before the attention of any legislative body in America, it would certainly gain the most earnest support of all. Unfortunately, it would take an enormity of work and individual effort to secure this, and were it once secured the whole project might run dangers of being wrecked on partisan considerations.

If only the earnest workers in practical medicine throughout the United States—those conscientiously striving to limit the woes of their fellow-men—would give this reform their attention and active support, practical results would infallibly follow. It seems a subject eminently proper and worthy of being considered by medical associations, local and congressional.

AT WHAT AGE MAY A WOMAN MARRY?

THE question as to the suitable age for a woman to marry is one that concerns alike the philosopher, the political economist, the moralist, and the physician. It involves so many interests, and needs to be studied under such different aspects, that it is not strange the answers are sometimes widely different.

PLATO, in his *Republic*, asserted that twenty years was the proper age for a woman's marriage, while he deferred that of man until the age of twenty-five. MALTHUS regarded late marriage as the most important check to an increase in the population greater than the increase in means of subsistence. Wise political economists in general would postpone marriage until there is a reasonable assurance of ability to support a family. But the Catholic priest, looking at the question from a moral and religious point of view, holds that postponement of marriages among a large body of men is the fruitful source of evil. MR. LECKY, in his *History of European Morals*, makes the following statement: "The nearly universal custom of early marriages among the Irish peasantry has alone rendered possible that high standard of female chastity, that intense and jealous sensitiveness respecting female honor, for which, among many failings and some vices, the Irish poor have been preëminent in Europe; but these very marriages are the most conspicuous proofs of the national improvidence, and one of the most fatal obstacles to industrial prosperity."

The influence of idleness in hastening marriage is unfortunately quite positive. It would seem that manual laborers when out of work would postpone marriage, but observation proves that in many cases this is an error. For example, it has been observed at Manayunk, Philadelphia, that during strikes in manufacturing establishments marriages among the unemployed operatives are more frequent. The evil consequences of such untimely and improvident marriages are that pregnant women frequently do not have proper food, care, and rest, and that many a babe comes into the world without having been provided with suitable clothing to cover its nakedness and to protect it from one of the first perils of infant life—cold. If a law were made forbidding a woman to marry until the proposed husband could prove that he was able to support her and their children, the number of marriages would materially lessen; but, as in the old mythology, Cupid is blind, and law is impotent to govern those pierced by his arrows; certainly, however, wisdom will be justified of her children who do not rush into matrimony when the alliance inevitably leads to pinching poverty and squalid misery.

It is possibly true that early marriages may be advisable as a prophylactic against licentiousness; but it is protection of the male primarily rather than of the female that is thus sought. If young men had suitable and sufficient physiological, moral, and religious training, the necessity for such prophylaxis would be lessened. If, furthermore, the pitiless and inexorable judgments that society commonly visits upon the poor girl who lapses from virtue—branding her with a pariah-curse, and her offspring with a bastard's name and shame—were not thus restricted, if it were correspondingly severe to the author of her ruin, there would be less difficulty in deciding the matrimonial problem: a scheme of morals that punishes one transgressor exclusively fails in justice, and cannot abide—equal guilt demands equal punishment, without regard to sex. In certain circles the seducer is readily forgiven, and the man who has habitually associated with prostitutes can enter their sacred bounds, and in virtuous households become eligible and accepted as a husband, while the same households would not so much as let one of his former female associates be admitted into their kitchens, when she was endeavoring to end a life of shame and earn an honest living by daily toil. A woman had better never marry than open a private hospital and reformatory for a diseased and dissolute man. Too many young men are sowing wild oats, not thinking of the inevitable harvest—one that not only they, but also their wives and children must reap—of suffering, sorrow, disease, and death, instead of joy, happiness, health, and life. "Stop the licentiousness of men," said an experienced surgeon, "and more than one-half of the grave abdominal operations performed upon married women, so frequent in recent years, would not be needed."

But while the physician is political economist, moralist, and philosopher, or at least ought in some degree to be all these, looking at the question solely from a professional standpoint, the recently published investigations of KÖRÖSI at Budapest show that mothers permit their daughters to marry earlier than is best. According to his statistics the mortality of children is much greater when born from early marriages, while such of these children as do survive are not strong and healthy. In order that this mortality be reduced to the normal, the mother should be twenty-five years old when commencing to bear children. The young man of twenty is also too young to marry, if the interests of the children be considered. Furthermore, fecundity, *per se*, is not a cause of child-mortality if the parents have married at a suitable age, because, while true that this mortality is greater in large than in small families, the chief cause is found in the poverty of the former. Here again it seems that the question of marriage belongs in part to political economy. But in general it may be stated that a woman is wise who delays her marriage until she is twenty-four or twenty-five years of age; at least, this is the plain lesson to be learned from KÖRÖSI'S investigations.

THE TREATMENT OF VALVULAR LESIONS OF THE HEART.

A SHORT time ago we incidentally took occasion to state that the mere existence of a valvular lesion of the heart is of itself not an indication for treatment. It is rather the rational signs of deranged function that furnish the indication. The condition of health depends upon the perfect performance by every organ of its respective function, as manifested by the maintenance of the systemic equilibrium, a disturbance of which constitutes disease. To be successful the treatment of disease must be directed to a restoration of the equilibrium, and the first

step consists in the removal, when possible, of disturbing elements. If these be irremediable, the indication is by natural or artificial means to make good or to neutralize the existing deficiency. That which in disease is analogous to the condition of normal equilibrium is known as compensation—and the attainment and the maintenance of this must be the ultimate aim of any therapeusis. There are two modes by which this object may be accomplished: 1, by whipping up the failing organ, or 2, by reducing the demands upon it.

In a most interesting and philosophic paper on the treatment of valvular disease of the heart, Liebermeister (*Deutsche medicinische Wochenschrift*, No. 46, 1891) makes medicinal treatment subordinate to mechanical treatment. The former is to be employed when definite indications exist; the name by which the lesion is known does not furnish the indication; each case must be judged for itself. In not a few cases there is a spontaneous tendency to the establishment of compensation. The reserve or latent force of the heart, that which in health is not ordinarily called into activity, is in disease drawn upon—and this is a point that practitioner and patient should realize. A heart embarrassed by a valvular defect may be competent to meet ordinary demands, but it will fail in the face of extraordinary demands. The functional capability of the individual heart must in each case be determined and the burden to be placed upon it regulated accordingly. Compensation for valvular defects means hypertrophy, but this dare not be excessive, for overgrowth begets premature degeneration.

Graduated cardiac gymnastics is an important factor and a useful adjuvant in the development of a compensatory hypertrophy. When shortness of breath and palpitation of the heart are absent, it may be considered that compensation has been established. Once established, it is necessary to its maintenance that the general nutrition, and with it that of the heart, be maintained.

The mechanical means of treatment of disease of the heart may well and often necessarily must be supplemented by the judicious employment of drugs. The best agent, that most general of application and the most reliable, is digitalis; but it should not be forgotten that a condition of tolerance, of insusceptibility to digitalis is soon established. To obtain the best results, the drug should not be continuously administered for a period longer than three or four weeks, and its administration should not be resumed until an interval of four weeks has elapsed after its withdrawal. The longer the interval that can safely be allowed to elapse, the better the result, both immediate and remote. If the valvular defect is great, or if the muscular fiber of the heart be degenerate, digitalis may fail to effect compensation. In some cases in which digitalis fails, one of its congeners, such as strophanthus, convallaria or caffeine, may succeed. Strychnine or atropine may prove of service. Calomel in small doses acts admirably as a diuretic. Laxatives find a useful place in treatment. Diaphoresis may be serviceable, though care must be observed that the temperature of the patient be not raised above 102.5°. Paracentesis may be necessary to remove accumulations of fluid; multiple puncture to diminish the degree of anasarca. A dry diet may accomplish like results, but it cannot be rigidly enforced. Tepid baths or brief applications of cold to the precordia may be sedative to an overacting heart. Alcohol, ammonia, or camphor may be required as stimulants. Under certain conditions of embarrassed circulation, when other measures have failed, brilliant, though perhaps only temporary, results may be obtained by free venesection. Venesection is indicated when manifestations of otherwise irremediable blood-stasis exist, as indicated by symptoms of pulmonary and of cerebral edema. We believe that when degeneration of the myocardium coëxists with valvular lesions, good may be accomplished by the employment of nitro-glycerin. The injunction to treat the patient and not the disease applies with especial emphasis to cases of valvular lesion of the heart.

SELECTIONS.

THE INFLUENCE OF INFLUENZA ON THE ENGLISH DEATH-RATE OF 1890.

The report of the Registrar-General for 1890, relating to the births, marriages, and deaths in England and Wales during that year, has just been issued. The birth-rate, which had shown a continuous decline since 1876, was the lowest recorded during any of the last fifty years, although the marriage-rate during the last four years has shown a steady increase, and was higher in 1890 than in any year since 1883. With regard to the deaths during the period under review, it appears that the standard of public health reached in recent years was not maintained during 1890. The death-rate, which had been 19.1, 18.1, and 18.2 per 1000 persons living in the preceding three years, 1887–88–89, rose to 19.5 during 1890. It should be noted, however, that

compared with other earlier years, this death-rate was still a low one; for in none of the ten years, 1881–90, was the death-rate as high as 20.0 per 1000, whereas in no year previously to 1881 was it ever so low. The increase in the rate of mortality in 1890 is attributable to the epidemic of influenza, to which, although it was generally prevalent only during the first quarter of the year, 4523 deaths were directly ascribed. This, however, probably represents but a small proportion of the mortality really attributable to influenza; for the immense increase in the mortality from respiratory diseases at the same time, notwithstanding the mildness of the season, was clearly due to the same cause. The Registrar-General estimates the number of deaths directly or indirectly due to epidemic influenza in 1890 at upward of 27,000, which is equivalent to a death-rate of almost one per 1000. It is satisfactory to note that the mortality from nearly all other zymotic diseases was below the average. Only 16 deaths resulted from small-pox in 1890, the smallest number in any year on record. The deaths referred to constitutional diseases, especially to phthisis, showed a marked increase, probably attributable to the fact that a number of persons of phthisical constitution were prematurely carried off by the influenza epidemic during the earlier part of the year.—*Brit. Med. Journ.*

THE INFLUENZA-BACILLUS.[1]

I. Preliminary Communication on the Exciting Causes of Influenza. By DR. R. PFEIFFER, Chief of the Scientific Section.

The following results are based on the accurate examination of thirty-one cases of influenza, in six of which a necropsy was made. A complete report will be published as soon as possible:

1. In all the cases of influenza a bacillus of a definite species was found in the characteristic purulent bronchial secretion. In uncomplicated cases of influenza these tiny bacilli were found in absolutely pure cultures, and mostly in immense quantities. They were very frequently situated in the protoplasm of the pus-corpuscles. If the influenza had attacked persons whose bronchial tubes were already otherwise diseased—as, for example, tuberculous patients with cavities—other microörganisms besides the influenza-bacilli were found in the expectoration in variable quantity. The bacilli may penetrate from the bronchial tubes into the peribronchial tissue, and even reach the surface of the pleura, where, in two cases examined *post mortem*, they were found in pure cultures in the purulent exudation.

2. These bacilli were found exclusively in cases of influenza. Very numerous control examinations proved their absence in ordinary bronchial catarrh, pneumonia, and pulmonary tuberculosis.

3. The presence of bacilli kept equal pace with the course of the disease; with the cessation of the purulent bronchial secretion the bacilli began to disappear.

4. I had already seen and photographed similar bacilli in the same enormous quantities two years ago, during the first epidemic of influenza, in preparations of the sputum of patients suffering from the disease.

5. The influenza-bacilli appear as very tiny rodlets, of about the thickness of the bacilli of mouse-septicemia; but only half the length of these. One often sees three or four bacilli strung together in the form of a chain. They stain with some difficulty with the basic anilin dyes. Better preparations are obtained with dilute Ziehl's solution and with hot Löffler's methylene-blue. In this way it can be seen almost as a rule, that the two ends of the bacilli take the stain more intensely, so that forms are produced that can only with great difficulty be distinguished from diplococci or streptococci. In fact, I am inclined to believe that some of the earlier observers also saw the bacilli described by me, but that, misled by their peculiar behavior with regard to staining agents, they described them as diplococci or streptococci. The bacilli cannot be stained by Gram's method. In hanging drops they are immobile.

6. These bacilli can be obtained in pure cultures. On 1½ per cent. sugar-agar the colonies appear as extremely small droplets, clear as water, often only recognizable with a lens. Their continued culture on this nutrient medium is attended with difficulties, and up to the present I have not succeeded in carrying it beyond the second generation.

7. Numerous inoculation-experiments were made on apes, rabbits, guinea-pigs, rats, pigeons, and mice. Only in apes and rabbits could positive results be obtained. The other species of animals showed themselves refractory to influenza.

8. In view of these results, I consider myself justified in pronouncing the bacilli just described to be the exciting cause of influenza.

9. It is very probable that infection is produced by sputum charged with the germs of the disease; and the disinfection of the sputa of patients suffering from influenza is therefore urgently required as a prophylactic measure.

Addendum.—Dr. Kitasato has succeeded in cultivating the influenza-bacilli to the fifth generation on glycerin-agar.

II. On the Influenza-bacillus and the Mode of Cultivating it. By DR. S. KITASATO.

It is, perhaps, remarkable that in the case of a disease that in the last few years has attacked hundreds of thousands of persons, the specific exciting causes have, in spite of extremely numerous investigations, only lately been discovered. The cause, in my opinion, lies in the extreme difficulty of cultivating the tiny bacillus, and, without pure cultures a bacteriologist cannot, of course, come before the public with a new specific microörganism.

The difficulty of obtaining cultures of specific bacteria present in the sputum depends chiefly on the great contamination with microörganisms from the mouth, etc. The latter, in consequence of their more luxuriant and abundant growth, can, on our artificial nutrient media, completely overgrow and hide the particular parasites sought for. This occurs all the more easily the longer the time required for the specific parasitic microörganism in question to form colonies, as in fact happened in the case of the tubercle-bacillus.

[1] From the advance proof-sheets of the *Deutsche medicinische Wochenschrift*, in the *British Medical Journal* of January 16, 1892.

With the view of avoiding the obstacles in the way of a successful cultivation, Privy Councillor Koch has devised a method that has not yet been published, which enabled him many years ago, and myself again quite recently, to obtain pure cultures of tubercle-bacilli directly from the sputum, and which has also now been followed by me. The method to which I have just referred will soon be published in full detail.

With regard to the characteristics of the pure cultures of influenza-bacilli, I may emphasize the following points: On a sloping surface of set glycerin-agar the individual colonies present themselves as extremely small points, like droplets of water, recognizable during the first twenty-four hours only with the aid of a lens, so that macroscopically a test-tube containing them can scarcely be distinguished from a sterile one. The individual colonies are, as has been said, so unusually small that they may easily be overlooked, and it may thus have happened that previous investigators have overlooked them.

If a culture obtained from such a colony is placed on a new nutrient agar medium, numerous small colonies arise on the moist agar surface. A particularly remarkable point is that the colonies always remain separate from each other, and do not, as colonies of all other species of bacteria known to me do, join together and form a continuous row. This feature is so characteristic that the influenza-bacilli can thereby with certainty be distinguished from other bacteria.

The possibility of continued cultivation is now demonstrated. I have been able to reach the tenth generation in pure cultures. On gelatin the bacilli do not grow, as they do not generally multiply at a temperature lower than 28° C., which is the temperature at which gelatin solidifies. In bouillon they grow scantily. In the first twenty-four hours, single white particles are seen swimming in the bouillon, the intervening fluid being perfectly clear. Later, they sink to the bottom, and there form a white, woolly mass, whilst the supernatant bouillon remains entirely clear—a proof that we have to deal with an immobile bacillus. In conclusion, I may remark that I have accurately studied with the microscope and by culture for a long time the sputa of tuberculosis in respect to all the microörganisms besides the tubercle-bacillus occurring therein, and also the sputa of pneumonia, bronchitis, etc.; but the present bacillus, so extraordinarily characteristic in its cultures, and so easily to be recognized, has not come within my experience except in influenza patients.

III. On a Microörganism in the Blood of Influenza Patients. By Dr. P. Canon, Assistant Physician in the Hospital Moabit, Berlin.

During the last few weeks I have, under the direction of Dr. P. Guttmann, examined the blood of twenty influenza patients in stained preparations, and in almost all cases I have found in the blood one and the same microorganism. The examination of the blood was made in the following way: A drop of blood obtained by pricking the finger was received on a perfectly clean cover-glass; this cover-glass was placed upon another, and the two then drawn apart. The preparations, after they had been thoroughly dried, were placed in absolute alcohol, in which they were left for at least five minutes. They were then taken out and placed in the following staining solution (Czenzynke's solution): ℞.—Concentrated watery solution of methylene-blue, 49 grams; ½ per cent. eosin solution (dissolved in 70 per cent. alcohol), 20 grams; distilled water, 40 grams. The cover-glasses immersed in this staining solution were placed in an incubator at a temperature of 37° C., and left there for from three to six hours, when they were washed with water, dried, and imbedded in Canada balsam. In the preparations of blood made in this manner, where the red blood-corpuscles were red and the white ones blue, I found the microörganism referred to. It is found stained blue, sometimes in large quantities, but mostly sparingly, and only to be identified after a long search (about 4 to 20 in the preparation). Sometimes it appears as a small diplococcus; sometimes, especially when it is more deeply stained, as a short bacillus.

In six cases I have found it also in numerous larger and smaller heaps of from five to fifty individual microbes with a very characteristic appearance. In these six cases, the blood was drawn during a fall of temperature or shortly afterward; in three of these, no further rise of temperature occurred. From three to six days later I failed to find the microörganism in the blood in these three last cases. Sometimes by means of preparations of the blood alone, I have been able to make the diagnosis of influenza, when clinically it was not certain. I have also found the bacteria in the blood, and, indeed, in considerable quantities in cases in which there was no appreciable local lesion, and especially no cough or expectoration. While making the preparations I have generally at the same time made streak-inoculations of the blood on agar-glycerin-agar, sugar-agar, and bouillon. In six cases the bouillon was injected into mice, partly at once, partly on the following day after it had been in the incubator. These inoculations and experiments on animals always yielded a negative result. As on the basis of my researches I am of opinion that this microörganism occurs in the blood of all persons suffering from influenza (at least, in that of those who have fever), and as it is not found in the blood of other persons, and as it is a microörganism hitherto unknown, I believe that it stands in direct relation to influenza.

Privy Councillor Koch had the goodness to examine some of my preparations, and pointed out that the microörganism visible in them was identical with the bacterium found by Staff-surgeon Dr. Pfeiffer, which has been described in the preceding paper, which is published at the same time as mine. I began these researches about the middle of December; I have, however, still a large number of preparations to stain and to examine. I propose to publish the results of the further research in a later communication.

CORRESPONDENCE.

ON THE INFLUENZA EPIDEMIC OF 1789.

To the Editor of The Medical News,

Sir: It may be of interest to some to recall a few facts from an article in the *American Museum*, better known

as the *Universal Magazine*, on the epidemic of influenza that raged in this country during the Fall of the year 1789.

The epidemic began in the latter part of September, lasted six weeks, and spread very rapidly, disappearing as fast as it came, leaving quite a number in a very weak condition. The weather during the summer had been very dry; no rain falling, all ponds had been dried up, and were emitting foul odors; the thermometer was continually above 90°. The mortality is not given, but it is mentioned that when lung-trouble or consumption existed a speedy death was probable. Hard drinkers and old people were the first to die. To people at the seashore it was almost always fatal,[1] while people living an out-of-door life, such as sailors, longshoremen, etc., would have a much more severe attack than would men working indoors.

Two prominent symptoms were a feeling of fulness and stricture about the precordia, and an acrid discharge from the nose and bronchi that excoriated the mucous membrane, leaving about the nose and mouth large granulating sores for some time after.

Acute pain was felt in the head, fixed between the eyeballs, while Rush (page 355) reports "three cases which terminated in abscesses of the frontal sinus which discharged themselves through the nose. The pain before opening was so intense, the person almost losing his reason." Many complained of great itching in the eyelids; in some the lids were swollen, while others had true ophthalmia.

The ears were often involved, mastoid tenderness being very frequent, showing the implication of the mucous membrane of the Eustachian tube. Taste was often lost; toothache and swelled jaws were frequent.

On from the fourth to the fifth day the case would end by a free diaphoresis (Rush says "the sweats were very profuse, but afforded no relief to the patient"), leaving the person very weak, with a tedious cough, which, if the patient were susceptible, ran into pulmonary tuberculosis—in two cases into asthma.

The treatment seemed to have been rather varied, but that found best was the giving of mucilaginous drinks and fresh air in the room; small doses of antimonials and mild saline laxatives. Bleeding and opium, when used for the pain and fulness, were found to do more harm than good, and so were not much used.

During convalescence, bitter tonics and mucilaginous drinks soon placed the person in a condition to attend to his work.

In another part of the book the following was found, which was called *an effectual cure*: "Take four or five eggs and cover them with vinegar or lime-juice and allow to remain till the shells be dissolved, then add to them the following: Honey, brandy, sweet oil, āā Oss. S.: Take one tablespoonful every three or four hours."

In the spring of 1790 the influenza reappeared; everybody was again taken down with it, but those that suffered from affections of the head in the Fall were now afflicted with an attack that fell on the lungs and back, and *vice versa*.

Respectfully yours,

EDWIN S. POTTER, M.D.

1913 SPRUCE STREET, PHILADELPHIA.

[1] Rush: Medical Queries, 1805, vol. ii, page 358.

HEMORRHAGE IN TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: The experience of Dr. Rodman (THE MEDICAL NEWS, January 9th) according so exactly with my own, I wish to give a treatment adopted by me some two years since for hemorrhage complicating typhoid fever. I have passed through two rather severe epidemics, and since, during this time, I have had perfect recovery in every case, the treatment certainly deserves consideration. It is very much like the zinc carbolate treatment of recent years, yet I had never heard of this zinc carbolate when I began using my formula. Under its use I have not had a single hemorrhage that demanded or received special notice or medication. I do not recall a case in which the tongue became brown or dry (a condition common under the old *régime*), when so treated from the beginning. I have taken charge of cases on about the twelfth day, the patient having a dry, brown tongue, pointed, and intensely red around the edges, and have had this condition to disappear like magic.

I have learned long since, that all things must be thoroughly tested before we can rely on them; that, although my cases have all recovered, it might not be due to a special line of medication, but to the fact that I have been fortunate in securing remarkably light cases, my fellow-practitioners losing theirs because they happened to get severer, or more complicated cases. Yet it seems that during more than two years of experience with this treatment, covering many cases, of all ages, I surely would have had all types to contend with.

Leaving a discussion of all symptoms out of the question, just as soon as I find I have typhoid fever to contend with I place adults on a sulpho-carbolate of quinine treatment, giving them—

℞.—Quininæ sulph. }
Potassii chlorat. } . . . āā gr. x.
Acid. carbol., pur. . . . ♏ x.

Capsules, no. x.

S.—One every four hours, with two, three, or four drops of oil of turpentine.

I know the quinine sulph. and acid carbol. are antidotal to each other, and that the resultant compound is insoluble, yet this very fact made it the more rational, because I did not care whether the remedy was dissolved in the stomach, or waited until it reached the lower bowel before assimilation. It does not matter whether the treatment is rational or not; it has proved a powerful factor for good in my hands, whether or not this is due to its beneficial effect or to its insolubility, and consequently the doing of nothing according to the expectant plan. Instead of the new and depressing antipyretics, I use tincture of veratrum viride, in doses of one, two, or three drops as necessary, to control fever. I feed persistently from the beginning with fluid foods, using both beef and bird soups, and sweet and butter-milk, alternating these and insisting on one of them at least every two hours. Of course, complications are met as they arise, but in the main the treatment is persistently adhered to from beginning to ending of the fever. I firmly

believe that it will shorten the duration of every case of fever by several days.

Very respectfully,

J. E. STINSON, M.D.

MONTAGUE, TEXAS.

IVORY PEGS.

To the Editor of THE MEDICAL NEWS,

SIR: In an article by Dr. O. H. Allis, on "Ununited Fractures" (THE MEDICAL NEWS, January 2, page 3), the author says that pegs are not absorbed; that suppuration takes place, and that fixation is not satisfactory.

There are certainly exceptions to this rule. I have only used ivory pegs once—in an ununited fracture of the tibia: one peg was almost wholly, and the other one-fourth absorbed at the end of five weeks. There was no suppuration, and fixation was satisfactory. If desired I will send what remains of the pegs.

Respectfully yours,

G. S. ARMSTRONG, M.D.

OLYMPIA, WASH.

NEWS ITEMS.

The Annals of Ophthalmology and Otology is a new quarterly of 74 pages of excellent reading matter, well printed, and edited by Dr. J. P. Parker, of Kansas City, Mo. The subjects united in the title seem to imply that the two specialties are often still conjoined by the single practitioner.

The Medical Fortnightly is the name of a new journal to be published at St. Louis on the first and fifteenth of each month. The first number bears the date of January 1, 1892; it presents a neat appearance, and contains several interesting articles. Dr. Bransford Lewis is the editor-in-chief; he will be assisted by a number of associates.

Seventh Annual Report of the Adirondack Cottage Sanitarium.—For the year ending November 1, 1891, one hundred and thirty-six tuberculous patients were treated at the Adirondack Cottage Sanitarium. There were but two deaths, and these in advanced cases. Of seventy-seven patients discharged, fourteen were apparently cured; in twenty-three the disease was arrested; twenty-two were improved and eighteen were unimproved. The results were better in proportion to the time that patients remained under treatment. In eighteen cases injections of tuberculin were conjoined with the usual treatment. Of the six of these cases discharged, two were apparently cured; in two the disease was arrested; one was improved, and one was unimproved.

Leprosy in Russia.—The first leper-house in the Baltic provinces of Russia was recently opened at Riga. It is intended, provisionally, to accommodate twenty men and seventy women. The medical and administrative staff live in a separate building, and the attendants live as remote from the patients as possible.

A Balneologic Congress will be held at Berlin from March 10th to 13th, under the presidency of Professor Oscar Liebreich.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Association of American Physicians. Vol. VI. Sixth Session, held at Washington, D. C. Philadelphia: Printed for the Association, 1891.

The Physician as Business Man; or, How to Obtain the Best Financial Results in the Practice of Medicine. By J. J. Taylor, M.D. Philadelphia: The Medical World, 1520 Chestnut Street, 1891.

Massage and the Original Swedish Movements. By Kurre W. Ostrom, Instructor in Massage and Swedish Movements in the Philadelphia Polyclinic, etc. Second Edition, Enlarged and Illustrated. Philadelphia: P. Blakiston, Son & Co., 1891.

Diagnosis and Treatment of Hemorrhoids and Other Non-malignant Rectal Diseases. By W. P. Agnew, M.D. Second Edition. San Francisco, Cal.: R. R. Patterson, 1891.

Some Unusual Fractures of the Leg. By Fred. Jenner Hodges, B.Sc., M.D. Reprint, 1891.

Trop de Mutilations Inutiles pas Assez de Gynécologie Conservatrice. Par le Docteur A. Doléris, Accoucheur des Hôpitaux. Extrait des Nouvelles d'Obstétrique et de Gynécologie, août-septembre, 1891. Clermont (Oise): Imprimérie Daix Frères, 3 Place Saint-Andre, 1891.

Torsion, with Description of an Automatic Forceps for Rapid Torsion. By F. M. Briggs, M.D. Reprint, 1891.

Food in Health and Disease. By I. Burney Yeo, M.D., F.R.C.P. Philadelphia: Lea Bros. & Co., 1891.

Analysis of the Sensory Changes of the Ocular Apparatus as Found in Imbecility, Epilepsy, and General Paralysis of the Insane. By Charles A. Oliver, M.D. Reprint, 1891.

Surgical Shock. By J. E. Tefft, M.D. Reprint, 1891.

The Climate of Southern Arizona. By John Traill Green, A.M., M.D. Reprint, 1891.

Age of the Domestic Animals. By Rush Shippen Huidekoper, M.D. Illustrated with 200 Engravings. Philadelphia and London: F. A. Davis, 1891.

Deafness and Discharge from the Ear. By Samuel Sexton, M.D., Assisted by Alexander Duane, M.D. New York: J. H. Vail & Co., 1891.

A B C of the Swedish System of Educational Gymnastics. By Hartvig Nissen. With 77 Illustrations. F. A. Davis, 1891.

Annual Report of the Postmaster-General of the United States for the Fiscal Year ending June 30, 1891. Washington: Government Printing Office, 1891.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, 1891. Washington: Government Printing Office.

Twentieth and Final Annual Report of the Philadelphia Dispensary for Skin Diseases. Philadelphia: Spangler & Davis, 1891.

The Modern Treatment of Disease; A Practical Résumé of Modern Methods Employed in the Treatment of Chronic Articular Osteitis of the Hip. By Charles F. Stillman, M.Sc., M.D. Detroit, Mich.: George S. Davis, 1891.

The Upper Air-passages and Their Diseases. By O. B. Douglas, M.D. Reprint, 1891.

The Hydriatic Treatment of Typhoid Fever. By Chr. Sihler, M.D., Ph.D. Cleveland, Ohio: Chr. Sihler, 1891.

Ferments Contained in the Juice of the Pineapple, etc. By R. H. Chittenden, Assisted by E. P. Joslin and F. S. Meara. Reprint, 1891.

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ORIGINAL ARTICLES.

ACUTE EDEMA OF THE LARYNX, WITH THE REPORT OF A CASE RESULTING FROM PYEMIA.[1]

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THE importance and rarity of acute edema of the larynx justifies me in calling attention to an interesting case of this affection that recently occurred in my practice:

On February 2, 1891, I was called in consultation with Dr. C. V. Boarman, of Washington, to see the patient, G. S., aged thirty years, a fish-dealer by occupation, and a man of strong physique. Upon entering his room I found him breathing rapidly and with great difficulty, but there was no audible stridor. The man's face was flushed and presented an anxious expression; the voice was husky, with a peculiar metallic quality; deglutition was painful and difficult. There was some swelling of the neck, and over the left thyroid gland there was an enlargement, about the size of a pigeon's egg, which was very painful on pressure. He expectorated a thick purulent secretion, the expulsion of which was attended by sharp, lancinating pain.

On examination of the throat, there was observed a slight redness of the posterior wall of the pharynx and of the fauces; but the parts could not be said to be the seat of active inflammation. By means of the laryngeal mirror, I found the epiglottis to be enormously swollen and very red, projecting from the base of the tongue over the laryngeal cavity, so that the interior of this could not be seen. Lying on either side of the swollen epiglottis, between it and the lateral walls of the pharynx, was thick, purulent secretion.

As the necessity for relief of the impending suffocation was so urgent, without further questioning the patient, I freely scarified the epiglottis with the laryngeal lancet. Each incision was followed by a discharge of blood and pus, and to encourage the discharge the patient was directed to gargle with warm water. In a short while, he expressed himself as feeling very much relieved, although I was unable to detect any diminution in the swelling of the epiglottis. Ice was applied externally, and the man was directed to swallow cracked ice frequently. In less than two hours the patient was again seen, and found in a state of great excitement, as he felt worse, and the dyspnea seemed to be increasing.

Examination showed the epiglottis still to be greatly swollen. I scarified again, making deeper incisions than before. The flow of blood was not very profuse, but the patient was able to expectorate more freely, the expectoration still being thick and purulent. This gave him more relief than he experienced from the first scarification, and the swelling was perceptibly lessened. Ice internally and externally was continued during the night. On the following morning, the patient was somewhat improved as to breathing and deglutition, but the voice was about the same. The epiglottis was found to be still very much swollen—so much so that the interior of the larynx could still not be seen. Scarification with deep incisions was again practised.

At the Garfield Hospital, whither the patient was now sent, the following history was obtained:

He had had frequent attacks of sore-throat, but they were always mild in character, lasting only a few days. For the past three years he had led a very intemperate life, and on one occasion was confined in an inebriate-asylum. He had never had syphilis, but several years previously he had a small venereal ulcer on the prepuce, which healed in a few days; no constitutional symptoms have ever developed. On the 9th of November, he contracted gonorrhea, for which he was treated by internal medication; but the discharge, while becoming less, never entirely ceased. On January 9th, he consulted a prominent surgeon, who, in addition to prescribing internal medication, passed a sound for the relief of a deep-seated stricture. The sound was passed for the second time, January 26th, and that night he had a severe chill; feeling ill on the following day, he took a Turkish bath, but without experiencing any relief. He continued to feel somewhat ill, with occasional chilly sensations, until February 1st, when he experienced a severe pain in the larynx, attended with great difficulty in breathing. About the same time he noticed that his neck was swollen. These symptoms increased in intensity until I saw him on the following day, and found the condition that I have already described.

February 3—the day of admission to the hospital: His temperature was 103°; pulse, 106; respirations, 30. There was a slight purulent discharge from the urethra. Examination of the urine revealed nothing abnormal, save a large number of pus-cells. I continued ice internally and externally; gave $\frac{1}{12}$ grain of muriate of pilocarpine hypodermatically, and kept water impregnated with the compound tincture of benzoin boiling in the room.

[1] Candidate's thesis presented to and accepted by the Council for membership in the American Laryngological Association at its Thirteenth Annual Congress, September 13, 1891.

4th, 8 A.M. The temperature was 99⅘°; pulse, 96; respirations, 30. Noon, temperature, 103⅘°; pulse, 108; respirations, 36. At 8 P.M., temperature, 103⅕°; pulse, 112; respirations, 42.

The patient was restless and did not sleep during the night; breathing was easier; the voice was not so hoarse; he was still expectorating a purulent secretion; the swelling of the neck was subsiding. Examination with the mirror showed a marked subsidence of the swelling of the epiglottis. In the evening the man complained of severe pain in the epigastric region and at the lower border of the left lung. The treatment of the previous day was continued, and in addition 3 grains of salol were given every three hours.

5th, 8 A.M. Temperature, 103⅕°; pulse, 108; respirations, 48. Noon, temperature, 103⅘°; pulse, 102; respirations, 44. At 8 P.M., the temperature was 102⅖°; pulse, 112; respirations, 48.

The pain at the lower border of the left lung continues. Examination reveals a diminution of the respiratory murmur over the lower part of the left lung, both anteriorly and posteriorly. No râles and no dulness on percussion are detected; the patient complains of pain and numbness in the left arm. The swelling of the neck has entirely disappeared; the swelling of the epiglottis has subsided, and for the first time the arytenoid cartilages and the ary-epiglottic folds are visible. The whole larynx is intensely red, the congestion extending as far down the trachea as can be seen. There is no indication of an abscess at the base of the tongue; the expectoration has ceased, and there is no pain on pressure over the larynx. The salol and ice were discontinued, and 3 grains of quinine were given every three hours; and the larynx was sprayed with a solution of tannin (gr. xx ad ℥j) at similar intervals.

6th, 8 A.M. Temperature, 101⅖°; pulse, 118; respirations, 44. Noon, temperature, 102⅖°; pulse, 116; respirations, 52. 8 P.M., temperature, 101⅘°; pulse, 114; respirations, 52. A pronounced jaundice appeared this morning. The treatment of yesterday was continued, with the addition of tr. ferri chloridi, gtt. xx, every three hours.

7th, 8 A.M. Temperature, 100⅘°; pulse, 120; respirations, 50. Noon, temperature, 102⅕°; pulse, 120, respirations, 40. 8 P.M., temperature, 100⅘°; pulse, 122; respirations, 46. Jaundice still continues; the patient complains of pain in the left hypogastric region. Percussion shows no increase in the area of hepatic dulness, and there is no sensitiveness on pressure.

8th, 8 A.M. Temperature, 100⅘°; pulse, 120; respirations, 50. Noon, temperature, 102½; pulse, 120; respirations, 50. 8 P.M., temperature, 100⅗°; pulse, 124; respirations, 50. The patient is very restless and weak; jaundice is not so marked; there is incessant cough, but no expectoration. Examination of the larynx shows no subsidence of the congestion, and there is little or no secretion in the larynx and trachea. About 9 o'clock on this evening, the patient complained of intense pain in the left hypogastric region, and suddenly cried out that "something had given way internally." I saw him at about 9.30, and found the abdomen somewhat distended and painful; the skin bathed in cold perspiration; the pulse feeble and scarcely to be counted. He did not rally from this condition, and died at 1.30 A.M., death resulting probably from the rupture of an abscess of the liver.

It was unfortunate that a post-mortem examination could not be obtained, so that the diagnosis could be verified.

It is possible that the disease commenced as a primary erysipelas of the larynx, to which the pyemia was secondary. I think, however, that the history of the case points more forcibly to the urethra being the source of the infection that caused the blood-poisoning, with a secondary phlegmonous laryngitis.

The history of acute edema of the larynx dates from 1765, when Morgagni[1] found, upon post-mortem examination, a serous infiltration of the mucous membrane of the soft palate, fauces, and larynx. It was not, however, until 1808, when Bayle[2] read his remarkable essay before the School of Medicine of Paris, that this disease received a place in pathology. He unfortunately gave it the name of edema of the glottis, which term we frequently find applied to cases of edema of the larynx even at this late period. After Bayle came Tuilier,[3] who in his thesis describes the symptoms of edematous laryngitis, and states that the fluid is either serous or sero-purulent. He was the first to establish by means of a digital examination the existence of cushions or pads caused by the swelling of the ary-epiglottic folds.

Finaz de Seisel,[4] was the first to suggest the passage of an elastic catheter into the larynx for the prevention of suffocation from edema of the larynx. It does not appear, however, that he ever performed this operation himself, but he had often seen it practised by Desault. Numerous memoirs appeared after those of Bayle and Tuilier, but it was Bouillard[5] that recognized the inflammatory nature of the disease. He reported three cases, in each of which the edema was of the secondary variety. Cruveilhier[6] also recognized the inflammatory nature of the affection, and gave it the name of submucous laryngitis. He divided the disease into supra-glottic and infra-glottic edema. In 1852, Sestier[7] wrote his elaborate treatise on edema of the larynx, and collected the surprising number of 245 cases. From these he compiled his statistical results, which have been made use of in every important communication on

[1] De Sedibus et Causis Morborum.

[2] "Mem sur l'Œdème de la Glotte," Journ. de Méd. de Paris, 1819.

[3] Essai sur l'Angine Laryngée Œdemateuse. Paris, 1815.

[4] Quelques Observations Chirurgicals récueilles à l'Hôtel-Dieu de Lyon. Paris, 1813.

[5] "Recherches et Mémoires pour servir a l'Histoire de l'Angine Laryngée Œdemateuse," Archiv Gén. de Méd., 1825.

[6] Traité de Anatomie Pathologique. Paris, 1852.

[7] Traité de l'Angine Laryngée Œdemateuse. Paris, 1852.

the subject since that time. In 1862, Mandl[1] studied chronic edema of the larynx with the aid of the laryngoscope, and recognized the ary-epiglottic folds transformed into glistening cushions. This was the first communication on the subject after the introduction of the laryngoscope.

Acute edema of the larynx may arise quite independently of any inflammation; in such case it is characterized by an infiltration of a serous fluid in the submucous connective tissue of the larynx. It may occur in the course of hepatic obstruction, in acute and chronic nephritis, from malarial cachexia, from blood-stasis in the course of chronic disease of the heart and lungs, and, according to Von Ziemssen,[2] as a result of circumscribed obstruction in the laryngeal veins as a result of compression of the superior and inferior thyroid veins. That form due to inflammation is characterized by an infiltration of a serous, sero-purulent, purulent, and sometimes by a sero-sanguineous fluid in the submucous connective tissue. According to the statistics of Sestier, the disease seldom occurs before the age of fifteen years, and generally attacks persons between eighteen and fifty years of age, the majority of his cases being between eighteen and thirty-five years. Of 187 adults, 131 were men and 56 were women. Before thirty years of age the disease was generally a complication or sequel of some acute disease, while after that period it occurred in the course of chronic affections of the larynx.

In 1873, George von Hoffmann[3] found among 6062 post-mortem examinations made at the Berlin Charité, from 1869 to 1871, 33 cases of edema of the larynx, 10 of which were primary and 23 secondary. In 1879, Felix Peltesohn[4] found, in 3387 post-mortem examinations made at the same institution (from 1873 to 1878) 210 cases of acute edema of the larynx. Of these 149 were in men, 40 in women, and 21 in children. He found that the disease affected men generally between eighteen and sixty years, while the women were generally between eighteen and thirty-four years. Forty-four of his cases were due to local affections, and 164 were in consequence of general diseases.

In studying the etiology and prognosis of edema of the larynx, the statistics of Sestier cannot be taken as a guide, for it must be remembered that they were compiled before the days of the laryngoscope, when it was impossible to make a positive diagnosis. Furthermore, he did not separate the acute from the chronic form of the disease, and he included cases in which a dense deposit was present.

[1] "De la Laryngite Œdemateuse Chronique," Gaz. des Hôp., No. 69, 1862.

[2] Cyclopedia of the Practice of Medicine, vol. vii; N. Y., 1878.

[3] Edema Glottidis, Berlin, 31. März, 1873.

[4] Berl. klin. Wochenschr., October 28, 1889.

The statistics of Hoffmann and Peltesohn, having been taken from the post-mortem room, represent only the fatal side of the question; and, as the latter author states, if the records of a large clinic were available, other figures than he gives would be obtained. It would also be interesting to know what influence the modern treatment of this affection has had on the rate of its mortality. For this purpose I have collected the cases on record in the library of the Surgeon-General's Office of the United States Army, and have found reports of 96 cases. Of this number 86 were in adults—73 in men and 13 in women, 2 being in negroes—and 10 in children. The majority of the cases were between twenty and fifty years of age. In the cases of children, 7 were under six years, the youngest being only five months. In 4 cases the edema was the cause of sudden death.

Edema of the larynx is said to be primary or secondary, but on this point authorities are not in accord. Gottstein[1] doubts whether it ever occurs as a primary affection, and believes that in the majority of cases it is partly or entirely due to local disturbances. Mackenzie[2] believes that in the cases of edema following simple inflammation, the disease is due to blood-poisoning. He states that in every case that has come under his observation ample opportunity of acquiring septicemia has been present. Virchow[3] is of the opinion that in all cases of acute edema without a clear etiology, the affection is really one of primary erysipelas of the larynx. Cases do occur, however, that are apparently primary, and in nearly all of them there is a history of exposure to cold, while the body is in a low state of health or after great bodily fatigue. By reference to the tabulated list of diseases causing edema of the larynx, it will be observed that bodily fatigue and exposure to cold constituted the cause in thirteen cases. Marboux[4] reports an interesting case, apparently of primary edema of the larynx, in a man, who prior to the attack was in perfect health. While bathing with some companions, his head was forcibly submerged under the water, and in less than twenty-four hours he had a severe attack of edema of the larynx.

The disease occasionally occurs in the course of an acute laryngitis; but it is more frequently due to the extension of an inflammation of the adjacent parts. I find that it was the result of an acute pharyngitis in three cases, of tonsillitis in six cases, in three of which the inflammation had progressed to

[1] Die Krankheiten des Kehlkopfes, p. 100.

[2] Diseases of the Pharynx, Larynx, and Trachea, p. 201.

[3] Verhandlungen der medicinischen Gesellschaft, Berlin, 11. Mai, 1887.

[4] "Reflexion sur l'étiologie et la symptomatologie de l'Œdema de la Glotte," Rec. du Mém. de Méd., Paris, 1875, 3 sér., xxxi, 382.

suppuration, and in one case it was due to an abscess in the tonsillar region.

Edema of the larynx is sometimes developed in the course of syphilitic and tuberculous inflammations of the larynx, although Gougenheim[1] thinks that true edema occurs very rarely in tuberculosis of the larynx, and, when it does occur, it is generally the result of caries of the cartilages. On the other hand, pseudo-edema is of much more frequent occurrence in the course of tuberculosis. This condition is not characterized by a collection of fluid in the cellular tissues, but by an infiltration of tuberculous material.

Diseases of the kidneys have long been recognized as constituting a cause of acute edema of the larynx, but an infrequent one. Fauvel,[2] in 1863, was the first to call attention to acute edema of the larynx as the primary symptom of disease of the kidneys. He reported three cases in which the edema was the first and only symptom of renal disease. Since that time Waldenburg[3] and De Bary[4] have made similar observations, the latter author reporting a case of acute edema of the larynx in a child as the first symptom of acute nephritis following scarlet fever. Among the general diseases that seem to give rise to edema of the larynx may be mentioned typhoid and typhus fevers, debility following chronic malarial poisoning, rheumatism, septicemia, and pyemia.

The following is a tabulated list of the cases that I have collected, showing the diseases that preceded acute edema of the larynx:

LOCAL DISEASES OF THE THROAT AND LARYNX.		GENERAL DISEASES.	
Acute laryngitis	9	Chronic disease of the kidneys	3
Subacute laryngitis	1	Typhoid fever	3
Pharyngitis	4	Typhus fever	6
Erysipelas	3	Debility following malarial fever	5
Tonsillitis	6	Rheumatism	1
Abscess in tonsillar region	1	Frost-bite and resulting gangrene	1
Tuberculosis of the larynx	3	Gastric fever	1
Diphtheria	1	Septicemia	1
Syphilis of the larynx	2	Pyemia	1
Extension of an inflammation of the cellular tissues of the neck	1	Part of a general edema for which no cause could be assigned	1
Straining of the vocal cords	2	Alcoholism	2
Scald throat	3	Variola	1
Consecutive to chronic bronchitis	1	Consequent on great bodily fatigue and exposure to cold	13
Ecthyma of the face extending into the larynx	1		
	38		39
Traumatism	5		
Following the administration of large doses of iodide of potassium	1		
On forcible submersion of the head under water	1		
	7		

Leaving the etiology in 12 cases unaccounted for.

In general, the edematous infiltration is developed in those parts of the larynx in which the submucous cellular tissue is in greatest abundance. These parts are the anterior surface of the epiglottis, the ary-epiglottic folds, and the ventricular bands.

Hajek[1] has recently made some interesting experiments on animals to discover the parts most prone to edematous infiltration. He finds that there is a layer of loose cellular tissue on the anterior surface of the epiglottis that passes up to within half a centimeter of its border and there ceases. From this point the membrane is firmly adherent to the cartilage. This cellular tissue on the anterior surface of the epiglottis is continuons with that lining the lateral walls of the pharynx in front of the pharyngo-epiglottic ligament. The ary-epiglottic folds are made up of two layers of cellular tissue, the internal being continuous with that found at the apex of the epiglottis on its laryngeal surface, while the external is continuous with that lining the pyriform sinus and the lateral wall of the pharynx behind the pharyngo-epiglottic ligament. This arrangement of the submucous cellular tissue and the position of the pharyngo-epiglottic ligament, which divides this part of the larynx into anterior and posterior portions, have a very important influence on the course of an edema. It is frequently observed that in edema of the ary-epiglottic folds due to local causes, such as ulcers, traumatism, perichondritis of the arytenoids, the infiltration is limited by the pharyngo-epiglottic ligament; and it is only when the edema is of great intensity and the collateral inflammation is decided in degree that this ligament is broken through. As the submucous cellular tissue of the anterior surface of the epiglottis and that of the ary-epiglottic folds are separated by the pharyngo-epiglottic ligament and pass up into the lateral wall of the pharynx on either side of it, it is clear that inflammations of the pharynx may occasionally extend to the anterior surface of the epiglottis, and occasionally to the ary-epiglottic folds, accordingly as the inflammation is on a plane anterior or posterior to the pharyngo-epiglottic ligament. Edema of the anterior surface of the epiglottis never passes over the border of this cartilage to enter the laryngeal cavity, and it only passes over into the ary-epiglottic folds when the infiltration is so extensive as to break through the ligament.

[1] "De l'Œdema Laryngien dans la Tuberculeuse du Larynx," Ann. des Maladies de l'Oreille et du Larynx, 1884, x, 226.

[2] Aphonie Albuminurique, Rouen, 1863.

[3] Allg. med. Centralzeitung, 1865, 10.

[4] Archiv für Kinderheilkunde, 1886, viii, 96.

[1] "Anatomische Untersuchungen über das Larynx-œdem," Archiv für klinische Chirurgie, xlii, 146.

The edema is generally confined to that part of the larynx above the vocal cords. It, however, occasionally extends below the cords affecting the trachea and bronchi. In rare cases, it is limited to that part of the larynx below the vocal cords, in which case it is known as the sub-glottic variety. This form of the disease was recognized by Sestier, Cruveilhier, and Gibb, and of the 96 cases I find that 2 are of the sub-glottic variety: in one, reported by Gibb,[1] in a man thirty years of age, who had an inflammation of the cricoid cartilage due to traumatism, a resulting abscess caused edema of the sub-glottic space; in the other, reported by Lefferts,[2] in a boy five years of age, the disease followed exposure to cold. Both patients recovered.

The vocal bands are very rarely affected, as they contain very little cellular tissue. However, I find 2 cases recorded. In one reported by Natier,[3] the infiltration was due to tuberculosis; in the other, reported by Semon,[4] the edema was due to excessive use of the voice.

The order of frequency of the parts affected in my list of cases was: the epiglottis alone in 7; epiglottis and ary-epiglottic folds in 14; ary-epiglottic folds alone in 5; soft palate and ary-epiglottic folds in 3; arytenoids and vocal bands in 1; right arytenoid in 1; arytenoids and commissure in 4; vocal bands alone in 2; right arytenoid and corresponding ary-epiglottic fold in 1; epiglottis and arytenoids in 1.

The disease is generally bilateral, but occasionally it affects only one-half of the larynx. Feiber[5] describes a case in which the edema was contiguous to an acute pharyngitis, and in which the infiltration was limited to the corresponding half of the larynx. S. Solis-Cohen[6] reports two cases, both of traumatic origin, and Lefferts[7] one case that followed exposure to cold.

Acute edema of the larynx occasionally sets in with such suddenness that no warning is given, and the patient dies before aid can be rendered. Generally, however, the onset is more gradual, and the patient complains of a sensation as of a foreign body in the throat, the removal of which he attempts by swallowing and by the insertion of the finger in the throat; deglutition is painful and difficult, the voice is altered in timbre, dyspnea is always present, and the inspirations are frequently accompanied by a whistling, stridulous sound, especially when the ary-epiglottic folds are the seat of the infiltration. The patient is restless and has an anxious expression, and unless relief is obtained the face becomes cyanotic, and death results from asphyxia.

The diagnosis of this affection is not difficult: the symptoms of stenosis, in connection with the dyspnea and the alteration of the voice, indicate the larynx as the part affected, and by means of the laryngeal mirror the nature of the affection is at once revealed. The tumefied parts are red, though sometimes translucent and pale-yellow in appearance. In the absence of the laryngoscope, exploration with the index-finger as recommended by Tuilier can be practised, when the swollen epiglottis or ary-epiglottic folds can be felt. Great care must be exercised in carrying out this procedure for fear of causing suffocation.

Although acute edema of the larynx is a very serious affection, the prognosis is now not so unfavorable as it formerly was, owing to the practice of scarifying the swollen parts, and also to the early performance of tracheotomy when indicated. Sestier found that of 213 cases 158 proved fatal, in spite of tracheotomy having been performed in thirty. Bayle gives much more unfavorable figures, as 16 of his 17 cases proved fatal. Kühn (quoted by König[1]) collected 95 cases, 36 of which were fatal. Of the 96 cases that I have collected, the disease proved fatal in 34, giving a mortality of 35 per cent., which is a little less than that given by Kühn. The prognosis must be greatly influenced by the cause of the edema and by the intensity of the inflammation, as well as by the age and sex of the patient. That form due to an extension of inflammation from the pharynx generally does well when taken in time, but when the inflammation is due to erysipelas, or to constitutional causes, such as typhoid fever, septicemia, and pyemia, the chances are extremely unfavorable. The disease is more serious in men than in women, while the greatest mortality is in cases between ten and forty years of age.

Prompt local measures must be employed in order to relieve the obstruction to respiration. In no severe disease is there such speedy relief obtained by means of a simple operation as in acute edema of the larynx from scarification of the swollen parts. Sometimes the relief appears almost magical. Proposed and practised by Lisfranc in 1825, scarification did not receive the recognition of this eminent surgeon's colleagues, probably, as suggested by Dr. Bartlett,[2] on account of jealousy. We even find Cruveilhier,[3] a number of years later, saying he

[1] Lancet, London, Sept. 4, 1869.
[2] New York Med. Journ., Aug., 1877.
[3] Ann. de la Policlinique de Bordeaux, 1889, i, 71.
[4] "Isolated Edema of the Vocal Cords," St. Thomas's Hospital Reports, vol. xiii.
[5] "Zur Behandlung des circumscripten Kehlkop-fœdems," Wochenbl. d. k.-k. Gesellsch. d. Aerzte, Wien, 1870, 497.
[6] THE MEDICAL NEWS, Phila., 1885, xlii, 677.
[7] New York Med. Journ., Aug., 1877.

[1] Lehrbuch der Chirurgie, Bd. i, 615.
[2] "The History, Diagnosis, and Treatment of Edematous Laryngitis," Western Journ. Med. and Surg., Louisville, 1850, vol. xxxiii, 209.
[3] Dict. de Méd. et de Chir. pratique, "Laryngite," xi, 41.

"doubts whether this little operation of scarification has ever been performed." It was not until 1847, when the late Dr. Gurdon Buck,[1] unaware that scarification of the epiglottis had been previously performed by Lisfranc, practised it at the New York Hospital, and owing to his series of successes the operation became a popular one. It is best performed with the laryngeal lancet, with the aid of the laryngeal mirror, but in the absence of these it can be effected with the ordinary curved bistoury, covered, except for the last quarter-inch of its length, with adhesive plaster. After scarification, gargling with warm water will greatly facilitate the expulsion of fluid from the tissues. The cold coil or an ice-bag should be placed over the larynx, and the patient be directed to swallow cracked ice frequently. This, in conjunction with the hypodermatic injection of pilocarpine, as first proposed by Gottstein,[2] will hasten the absorption of the fluid and often prevent a recurrence of the edema. The atmosphere of the room should be rendered moist by boiling water containing the compound tincture of benzoin. Inhalation of astringents will often assist in the absorption of the infiltrated fluid and the restoration of the inflamed membrane to health.

If, in spite of the scarification, the edema continues and the dyspnea increases, then tracheotomy should be performed without further waiting. The lives of many patients have been saved by the early performance of this operation; and remembering the liability of the edema to extend into the trachea, it is best to operate low down, making sure that the knife has entered the trachea, so that the tube will not pass between the swollen mucous membrane and the wall of the trachea—an accident that has happened to good operators.

Intubation has been successfully practised by Desault,[3] Macewen,[4] Meier,[5] Ingals,[6] and Altamirano,[7] but it has not been performed often enough for any estimation of the value to be placed upon it as a substitute for tracheotomy. Its efficiency, of course, depends upon the part of the larynx that is edematous. Ingals refers to one case in which the obstruction to respiration could not be relieved by the laryngeal tube. It would seem, however, that cases of chronic edema and those acute cases in which the edema is moderate in degree and in which there is danger of paralysis or spasm of the posterior cricoarytenoid muscles, such as in the unfortunate case reported by J. Solis-Cohen,[8] are best suited for intubation.

[1] Trans. Amer. Med. Assoc., Phila., 1848, i, 135.
[2] Die Krankheiten des Kehlkopfes, S. 104.
[3] Charazac: Étude sur l'Œdème du Larynx, Paris, 1885.
[4] Brit. Med. Journ., Dec. 28, 1878.
[5] Med. Record, May, 1888.
[6] Sajous's Annual, vol. iv, 1890. [7] Ibid.
[8] Diseases of the Throat and Nasal Passages, p. 443.

CONTRIBUTIONS TO THE STUDY OF HETEROPHORIA AND ITS RELATION TO ASTHENOPIA, HEADACHE, AND OTHER NERVOUS SYMPTOMS.[1]

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I assume that at least all but a very small minority of the members of this Society recognize the existence of a condition of disturbed equilibrium of the external ocular muscles that gives rise to well-marked symptoms of asthenopia, headache, and other nervous symptoms; I also assume that we have not as yet reached the last word on the therapeutics of these conditions, and that we are all desirous of accumulating trustworthy evidence on the merits of the different methods that have been proposed for their relief. I can say in support of this, my humble contribution, that the observations have been made with a mind free from bias or prejudice, and the facts recorded with honesty.

I have used the terms heterophoria, exophoria, esophoria, etc., introduced by Dr. Stevens, because they are short and distinctive, and designate, with sufficient exactness, the actual conditions.

I have not found heterophoria of so common occurrence as has been reported by some observers. For a number of years I have, with few exceptions, tested every case of optic defect that came under my observation in private practice, for a disturbance of equilibrium in the external muscles, and taking 100 cases at random in my case-book, I find that among that number there were 22 in whom heterophoria of some kind and degree was present. In most of these no attempt was made to correct the fault, either because the patient was not seen again, or because the correction of the other ocular difficulties gave all the relief that was desired. Heterophoria does not, any more than ametropia, always give rise to asthenopia or call for correction; and I am, from my own observation, inclined to believe that heterophoria of even small degree is rarer than ametropia—that is, that human eyes are more normal in regard to their muscular equilibrium than to their optic condition.

We are not yet, I am free to confess, in a position to generalize and formulate positive dicta in the matter, but my experience would lead me to infer that an exophoria or an esophoria of two prism-diopters in persons of average health does not, usually, give rise to trouble on ordinary use of the eyes; hyperphoria of that amount, I think, does. Moreover, the defect is a quantity constantly varying with the condition of the patient, so that we must allow ourselves considerable latitude in estimating its actual and permanent amount. It is this fact, probably

[1] Read at the meeting of the American Ophthalmological Society, held at Washington, September, 1891.

beyond all others, that lies at the foundation of our difficulties in therapeutics.

I examine the equilibrium always at an infinite distance, the eyes being then in a condition of accommodative relaxation and in a state of practically normal parallelism, or at least in a condition of normal muscular inertia.

In testing, I use the flame of an Argand burner in my ophthalmoscopic room, six meters away, turned low, and produce diplopia by means of an eight-diopter cylinder. This has all the advantage of the Maddox prism, with the additional advantage that, by moving the lens at right angles to its axis, the very much elongated image effected by the cylinder moves up and down or laterally, enabling patients who are not very ready at observation to tell at once the relative position of the gas-jet and the streak of light—that is, whether the latter passes through the flame or to one side. On the black wall of the ophthalmoscopic room I have ruled white squares with six centimeters between the lines; opposite the center of the system of squares I place the flame of the Argand burner. The patient can then indicate, if there be any diplopia, the number of squares that separate the light-streak, and the side on which it is from the flame. At the distance of six meters each square of six centimeters represents one prism-diopter of deviation, and thus the number of spaces of separation gives the degree of heterophoria expressed in the number of the prism necessary to correct it; and the side on which the light-streak is seen gives us knowledge of the kind of heterophoria.

I consider the test at an infinite distance the necessary one, and that at the working distance less important because less reliable. It is common to find quite a considerable heterophoria at a distance, and yet none with the dot-and-line test of Gräfe. The accommodation comes in here to vitiate the result. The power possessed by the individual muscles, as expressed by their ability to overcome prisms, I do not rely on so much as I formerly did. The power of overcoming prisms is one of education largely, and, while not unduly depreciating the method, I consider it inferior to the test at infinity. It is here that the real relative power of the muscles is shown, and that is what we want to know. I do not deny the possibility of the existence of a positive weakness of the interni that will give a separation of the double images in convergence, which is not apparent at the test at infinity; but I think such a condition must be rare.

Another point on which we are in need of statistical investigation is the relative frequency of esophoria, exophoria, and hyperphoria. Formerly, insufficiency of the interni was considered the sole cause of muscular asthenopia—as it was called, to distinguish it from that due to accommodative strain—and I think we have all been surprised to find how often weakness of the externi is the cause. Dr. Noyes, as is well known, has found this condition the more frequent of the two.

I find that among 50 recorded cases of heterophoria taken in succession from my case-book, there were 28 cases of exophoria, 18 of esophoria, 3 of hyperphoria, and 1 of combined esophoria and hyperphoria.

Coming now to therapeutics, there are, of course, only two methods of treatment, if we recognize the existence of heterophoria apart from ametropia, and these methods are: prisms, and operation on the muscles. All cases of heterophoria do not demand correction for the immediate relief and comfort of the patient any more than all cases of ametropia do; but there can be no question that in the one case as in the other such correction will place the patient in a much better condition ocularly, and probably forestall a future break-down. But there is, unfortunately, a large, suffering class, clamoring for relief, and it remains for us to choose between these two methods of cure.

It would seem, at first blush, that prisms would fill all indications, and that we had only to select the prism that appears to correct the faulty position of the double images and the difficulty would be overcome and the desired relief obtained. In this, however, our hopes are often blighted. In some cases, it is true, we hear no further complaint, and the prisms are worn with perfect satisfaction. In another contingent of cases, the relief is only partial, and in many others no benefit at all is experienced.

It has heretofore been assumed by practical ophthalmologists, and, I think, by all physiologic opticians as well, that, theoretically at least, the prism is able to correct optically all of the difficulty. Though the prism is the simplest of all optic instruments except plane glass, it does not seem to be remembered by these that its optic properties are not a little complex, even under the conditions that usually prevail. Physicists, however, have for a long time been aware of these phenomena, and have treated of them mathematically, and a full consideration of the subject can be found in the recent works of Heath[1] and Aldis.[2]

In order that light be deviated by a prism in accordance with the well-known laws laid down in our ordinary treatises, the pencils must be parallel. When they become divergent, not only do these laws become modified in such a manner that deviation for the divergent is less than that for parallel

[1] R. S. Heath: Geometrical Optics. Cambridge, 1887.

[2] W. Steadman Aldis: Elementary Treatise on Geometrical Optics. Third edition, Cambridge, 1888.

pencils, but, in addition, the prism exercises a demonstrable astigmatic action—that is, a point from which the rays fall divergently on a prism has, after their passage through the prism, a focal interval of Sturm in which, however, the focal lines are not, as in sphero-cylinders, straight, but of a peculiarly curved form. Moreover, it has been found that the thickness of the prism itself cannot be wholly ignored, as we have been accustomed to do, and that the refraction is different at its apex and base. It is only in prisms of five prism-diopters and less that the accepted laws of prismatic refraction apply.[1]

Then, again, there is the annoyance almost always experienced in getting accustomed to the use of prisms—a difficulty that is overcome only in many instances after a long period of education, and sometimes not at all. And furthermore, there is a class of patients that protests strenuously against the use of spectacles of any kind. There are many women who would rather submit to any number of tenotomies than wear glasses for a week. And we must remember, too, that the wearing of glasses is a burden and a great inconvenience, and in not a few instances a handicap in the race of life. We have so accustomed ourselves to the inevitable spectacles in correcting ametropia that we do not sufficiently recognize that in heterophoria there is an alternative; finally, there are those cases in which prisms do not give the desired relief. If, then, we shall determine that heterophoria is correctable by an operation, that operation will and should be the rule, and the use of prisms the exception.

The correction of disturbance of muscular equilibrium by tenotomies is now on trial in this country, and evidence in its favor is constantly accumulating. Beyond the sea, so far as my knowledge extends, nothing of any consequence is being done in that direction in advance of what was accomplished by Gräfe, whose work was directed wholly against the insufficiency of the interni in myopia. One explanation of this may be, that they do not have the amount of asthenopia from the same cause there as we do here.

Like nervous prostration, I think the asthenopia of ametropia and heterophoria is a disease developed largely by the American method of living, which, however, on that account is none the less a disease requiring at our hands the most careful consideration. If tenotomy will restore the lost equilibrium of the muscles, it is certainly the most scientific, the readiest, and in every way the most commendable method of dealing with the difficulty. My own experience with the operation is somewhat limited, but could have been greater had I been less conservative and cautious. The results, however, have been eminently satisfactory and such as to convince me that not only is it a legitimate operation, but one that, under certain circumstances, is imperatively demanded.

As briefly as possible I will give the salient points in the histories of five cases in which I have done the operation of partial tenotomy.

Case I.—Miss J. H., a Western girl, "with no nonsense about her," aged nineteen, was seen first December 13, 1889. She had been struck on the right eye by a stone when eight years old and there is a remaining scar on the cornea on the outer margin. Vision, however, was the same as in the other eye, namely $\frac{5}{9}$, which with +0.75, 100° R. and +0.5, 80° L. became $\frac{5}{6}$. The keratometer gave L. 155° 44 D. 15° × 1, R. 75° 44 D. 150° × $1\frac{1}{4}$. She had suffered so much from her eyes and head that it had been impossible for her to get any systematic education. Any use of the eyes would give her a violent headache. She was treated for a long time by one of the best ophthalmic surgeons in the West, but with no permanent relief. The muscular equilibrium had not, however, been tested until she came to me. I found that she had at the first examination an esophoria of 5 P. D. She fused 5 P. D. base in and 20 P. D. base out. On the 16th her esophoria was 7, and on the 24th 8°. She was given R. +0.75, 100° prism No. 4, base out. L. +0.5, 80° prism No. 4, base out. From the use of these glasses she experienced some relief, but she was still unable to use the eyes with any degree of regularity or reliability. On June 17, 1890, the esophoria was 10 P. D., and on the 18th 12 P. D. I then advised a tenotomy and it was readily acceded to, the patient being willing to submit to anything for relief. Accordingly, on the 23d I made a partial tenotomy of the right internus, correcting the esophoria to 4 P. D. On July 9th she was ordered R. 3 P. D. base out, L. 1 P. D. base out, and went away for the summer. She used her eyes all summer in fair comfort, getting more use of them in three months, she said, than in any three years before. She came home and went to hard work and her eyes began to trouble her again, and her prisms did not afford her the desired relief. I then made another partial tenotomy of the same muscle on October 22d, leaving only a few fibers above and below. The correction was complete for an instant, the images then separating somewhat, homonymously. In a few days this settled down to 2 P. D., at which it has remained approximately ever since. She has been able to use her eyes with comfort most of the time since; has continued her musical studies, and sews and reads as she has never done before in her life. As she says herself, "It has made a new girl of me," and certainly her general appearance is vastly better than before the operation.

Case II.—Miss Annie B., a stout, healthy-looking girl, aged seventeen, was first seen March 23, 1886. She had at the time myopic astigmatism, R. —2 ◯ 0.5,90°; L.—1.5◯—0.5,90°. No note is found that the muscular equilibrium was examined at that time.

[1] Mr. C. F. Prentice has given a graphic representation of this. American Journal of Ophthalmology, Oct. 1891.

She returned on February 25, 1889, with serious complaint of her eyes and head. She looked worn and haggard, and her headache was almost constant and had been for eighteen months. The myopia had increased in the right to —5 D., and there was at the first examination an exophoria of 4 P. D. She fused 4° base in, 14° base out. She was ordered the prisms in addition to her ametropic glasses, but they were not at all satisfactory. She had a little less pain when she used them than when she did not, and the exophoria had increased to 8 P. D. I advised a tenotomy, and it was done on November 13, 1889. The exophoria was reduced to 3°. This varied from time to time, being sometimes more, sometimes less, until it finally settled at 3° on November 26th. On the 6th of December she reported that she reads all she wants to without pain and that her headaches are gone. On January 28, 1891, she had an attack of asthenopia and the old pain in the head from overwork, and the exophoria was 4 P. D., and we thought we might have to make a tenotomy; but a few days' rest relieved it, and she has been in comparative comfort ever since.

CASE III.—Miss C. W., aged twenty-one, I first saw April 24, 1887. She complained of great pain from the use of her eyes, which went from the back of the eyes to the back of the head and neck. She had suffered then for a year and had done everything for it. Her vision was $\frac{5}{5}$ and there was no ametropia. She fused 3° base out, 21° base in, and there was an exophoria of 5° or 6°. She was given: R. 3° base in, L. 2° base in. I heard nothing more from her until January, 1891, when she came to me from her physician with a request that her eyes be examined again. She had been wearing the prisms ordered nearly four years ago and with some relief at first, but the headaches had lately become so constant and intense that life was a burden. She was willing to submit to anything that promised relief. Her exophoria was 8 P. D. She accepted the proposition for a tenotomy readily, and I made it January 31st, reducing the defect to 2°. On February 4th it was 4°, on the 10th 4°, and on the 14th 6°. The relief was at the time very marked. I saw her no more until June, when she returned with the old complaint. I found that the exophoria was again 8 P. D., and the red glass gave double images, the result of the first operation being *nil*. Another partial tenotomy was made on the right eye on June 13th, this time cutting away a triangular piece of the middle of the tendon. I allowed at this operation an over-correction of 1 P. D., which remained after a conjunctival suture was applied. On the 10th the stitch was removed and complete correction was found, the false image varying however sometimes a little to the right and sometimes to the left. On the 18th the exophoria was 2 P. D., on the 22d 1½ P. D., and on the 26th 26 P. D. She then went away for a vacation, her nervous system being a total wreck.

CASE IV.—Mrs. I. D., a lady aged fifty-eight, five years ago had some trouble with her head that was diagnosticated as congestion of the brain. Not long afterward she noticed that her eyes pained her on use and that headaches were frequent. These symptoms increased and for three years she has been unable to use her eyes at all. The reading of more than a dozen lines of print at one time is impossible and she has accustomed herself to write with her eyes shut. Her general health seems to be good and she spends the greater part of her time out of doors in the country. Her disease was considered retinitis by an oculist under whose care she had been for a long time past, and the prognosis was regarded as grave. There was no evidence of retinitis apparent at the time of my examination, and with $+0.75\ \mathrm{V} = \frac{5}{6}$ in R., and with $+0.75 \bigcirc +0.5$, $90°\ \mathrm{V} = \frac{5}{6}$ in L. A necessarily hasty examination at that time revealed an exophoria of 5 P. D. at infinity, and a much greater one for the working distance. A red glass before one eye produced diplopia. The nature of the trouble was explained to her, and she was encouraged to believe an operation might relieve her if the glasses (3° base in, R., 2° base in, L.) did not lead to a satisfactory improvement. She reported by letter, from time to time, that the prisms were beneficial, but the relief was not perfect, and finally she came down on May 9, 1891, to have the operation performed. The exophoria was then 10 P. D., as it was on the 12th when the operation was performed. She was able to fuse 1 to 1½ P. D., base out. I made a tenotomy of left externus, leaving a few fibers above and below, and the correction was well-nigh perfect. I then cut out a small triangular piece of the tendon between these attached fibers. I did this in the belief that a greater diminution of power would follow its reattachment on account of its diminished length. Immediately after the operation, she fused 2 P. D. base in. On the 13th she fused 3 P. D. and a 3 P. D., base in, superposed the images. On the 15th, 2 P. D. superposed them, though there was a great deal of unsteadiness, as there was indeed until she left for home on the 17th. On that day, however, she read several pages without fatigue. I have not seen her since, but the value of the operation in her case can best be expressed by an extract from a letter which she wrote me some four weeks after the operation: "You will remember that before going to you I could do absolutely nothing that required the use of my eyes, without pain in both head and eyes so great that I would be obliged to stop in a few minutes. When I first came home there would be some sense of strain, some little quivering sensation after reading or sewing for a while; this has gradually passed off, and I now read or sew or write as long as is convenient—as much as three or four hours at a time." Naturally such a result as this is not likely to lead me to an early abandonment of partial tenotomy in heterophoria.

CASE V.—Miss H. J. B., aged twenty, a sister of Case II, I saw for the first time on July 25, 1891. She is a strong young woman, both mentally and physically, but had been obliged to give up her studies at Wellesley College on two occasions for a year on account of persistent headache, confined almost exclusively to the occiput and back of the neck. For this she had tried all sorts of things, but with no avail. She would often be disturbed in the night by the pain, and it was commonly present

on waking in the morning. As her vision was good, she did not connect the pain with her eyes, but only came to have her eyes examined as a *dernier ressort*, and with a hope that something might be found the correction of which would relieve her of her burden. She is emmetropic, the ophthalmometer showing only the normal corneal astigmatism and V = $\frac{5}{5}$. She had at the first examination a manifest exophoria of 7 P. D. The next day it was 8 P. D. I gave her No. 3 prisms for each eye, to be worn during my vacation. I saw her next on the 6th of September and the manifest exophoria was 10 P. D. The prism had given some little relief, but she was more than willing to have a tenotomy performed, and this I did on September 9th, on the right eye, leaving some fibers above and below, but excising a piece of the middle portion. The exophoria was reduced immediately to less than 2 P. D., and the false image in the test would sometimes be directly above the true image. It varied but little from day to day and has finally settled down to 2 P. D. She fuses 5 P. D. base out, and in the test at the working distance there is no demonstrable insufficiency. This was only two weeks ago, and the headaches are already much improved.

A word or two in regard to the technique of the operation. It has been doubted in some quarters whether a permanent weakening of the muscular power can follow a division of less than the whole of the fibers of the tendon. In some cases it would seem that after the final healing of a single operation the heterophoria was little, if at all, diminished. To what the failure is due is not always apparent. I have thought it possibly caused by a want of sufficient retraction of the divided fibers, and have sought to compensate for this by an excision of a portion of them. The results, in the cases in which I have done this, have appeared to justify the procedure. Some, and among them Dr. H. D. Noyes, have favored a total separation of the fibers and a subsequent regulation by means of sutures. This would undoubtedly accomplish the purpose in view, but it seems to me that the risk of malposition of the tendon in the new insertion is very great in this plan. A slight rotation of the globe in adjusting the sutures might easily bring about such a change in the relative position of the eyes as to render the later condition of the patient much worse than the first. This danger of an improper reattachment of the muscle is one to which I think we have not paid sufficient attention, and it has induced me to modify my operation for advancement by leaving a few lateral fibers attached and advancing the tendon along the line of its central fibers. Dr. G. T. Stevens has considered this question in his last paper in Knapp's *Archives*, July, 1891.

The therapeutics of heterophoria by prisms has been treated of in so thorough a manner by so many competent authorities that its consideration here by me would unnecessarily increase the length of this paper, already over-long. In many cases I have found prisms satisfactory, especially when the heterophoria was of low degree, but in a large number of instances their use did not bring the relief desired, and almost never when the heterophoria exceeded 4 P. D.

Among the exceptional cases is the following:

CASE VI.—Miss C. N. T., aged eighteen, has been suffering from violent headaches for a number of years, and they have been almost constant during the last twelve months. Her vision is $\frac{5}{5}$; no ametrophia. She fuses 5 P. D. base down, 1 P. D. base up; has a hyperphoria of 6 or 7 P. D. Diplopia caused by red glass before one eye. I advised a tenotomy, but it was refused, and I ordered 3 P. D. base up in R., 3 P. D. base down in L. With these she has been using her eyes in fair comfort, with only one breakdown, from over-study, since January of this year. It is more than likely, however, that a tenotomy will yet have to be done.

Note, January 22, 1892.—As some time has elapsed since the foregoing histories were made, a report of the present condition of the patients will add to the interest and value of the statistics.

Case I is doing well, and has no cause of complaint on the part of her eyes or head, except that she is not able to read as much as she likes, which would be almost continuously. Other work, such as sewing, writing, and music, give her no trouble.

Case II reports that she has only an occasional headache, which can be referred to causes not connected with the eyes.

Case III returned from her short vacation still in a run-down condition, and with headaches on any effort of any kind. She is one of those unsatisfied, uncontrollable patients who demand immediate relief. She went under the care of another physician, who "treated the origin of the eye trouble in the general system," and did nothing for the eyes themselves. In time she began to improve in general health, and after a while the headaches disappeared. I have no hesitation in giving the tenotomies the credit of whatever permanent relief she has experienced. In patients as exhausted as she was, it takes weeks or even months for a full recovery to be effected.

Case IV still continues to use her eyes as she wants to with ease and comfort.

Case V has been doing work during the last three months that would have been impossible for her to have done before, and with only a moderate degree of discomfort. The headaches in the morning are gradually going off.

In Case VI I finally made tenotomies, as I felt sure I should have to do. She came complaining of some headache and pain in the eyes when she used them for any length of time. The prisms, though helpful, did not give permanent or constant relief. I first tenotomized the superior rectus of the left eye, reducing the hyperphoria to 4 P. D. Two weeks later I operated on the inferior

rectus of the right eye, getting complete correction. Four weeks after the last operation she writes that the relief has been complete, and that she has no trouble at all.

ELECTRO-PUNCTURE—ITS MOST USEFUL MODIFICATIONS AND ITS VALUE IN THE TREATMENT OF FIBROID TUMORS.[1]

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THE method of inducing atrophy of myo-fibromata of the uterus by currents from electrodes introduced into the substance of the tumors by puncture deserves special consideration, from the fact that it is essentially a bolder and more radical procedure than the other electric methods of dealing with these growths. Gynecologists who use electricity are greatly divided as to its value and freedom from risk, some rejecting it altogether, and others considering it the only method worthy of use. My own position in the matter has been represented as that of warm advocacy of puncture—a statement that was a surprise to me at the time, although I have recently had reason to look on the procedure under certain conditions and circumstances with increasing favor.

There is no doubt that this method presents itself with much favor to the beginner in the treatment of fibroid tumors, and I think this is often because tyros have the false impression that electricity acts in these growths by dissolving them. No error could be greater, and it is a mistake that is likely to lead to harmful work in the direction of over-treatment. It is true that we do not know the mode in which electro-puncture does act, but my observation has convinced me that the period between treatments is an essential part of the treatment itself, to be carefully arranged in each case, and that results are not proportionate to current-strength alone. These two facts, when taken together, certainly indicate that electricity does not accomplish the reduction and dissipation of fibroid tumors by electrolysis pure and simple, because this is a chemical disintegration depending in extent only on the number of millicoulombs used. Were this the method of its action, by an increase in the current it would be possible to dissolve the tumor at once and at one application. In the cases under my observation in which the tumors have disappeared,[2] no such currents were used. The current-strength was frequently smaller than that used in tumors that did not disappear. However we may explain it, it is certain that the absorbents bear an important relation to a shrinking fibroid after each electric séance, and that mere electrolysis is but a part of the work, and a part that may be subordinate to a more subtle interference with tissue-integrity and metamorphosis.

From experience I am not disposed to think that puncture presents necessarily any advantages over intra-uterine applications when either method is feasible. In certain cases apparently well adapted to both methods I have observed that puncture was better, but this seemed to be due to irritative conditions of the appendages that hindered or nullified the good effects of the intra-uterine applications. In such cases the punctures were much better borne, and produced no reaction.

VAGINAL ELECTRO-PUNCTURE.

Speaking of vaginal puncture alone, and premising that it should never be performed unless a portion of the tumor can be reached directly through the posterior vault, it may be said that the spot punctured is accessible and may be kept under rigid antisepsis, which is a distinct advantage over the prolonged application of a strong current to a restricted spot within the uterus.

As to the method of performing vaginal puncture, I have urged from the beginning that the trocar should be insulated through the healthy tissue in order that the latter may heal at once. This may be called *buried puncture*, in contradistinction to that of Apostoli. Not wishing to make a patulous opening or to have a possible slough at the point of application, both of which I believe are liable to occur at the positive pole, my punctures have been almost invariably negative. To meet these indications I have recently modified the specially insulated trocar formerly employed, and now use one of steel, combining certain features of my own and some of Apostoli's latest pattern. The one exhibited to you has, as you see, the shoulder now employed, I believe, by Apostoli, to prevent the instrument being inserted beyond one-half centimeter, but in this case the shoulder is one and a half centimeters from the point, permitting a possible insertion to the latter depth. Only the first half-centimeter from the point is exposed for the electric action, the remaining centimeter being covered by hard rubber that is flush with the needle-point, the diameter of the needle here having been lessened. The rubber insulation is vulcanized on the shaft, and presents a continuous insulation from the point to the attachment-socket at the posterior extremity. This has been the most satisfactory instrument thus far used by me, being strong and stiff, free from impedimental handles and sheaths, and incapable of being

[1] Read at the first annual meeting of the American Electro-Therapeutic Association, September 25, 1891.

[2] For a report of five such cases see Annals of Gyn. and Ped., July, 1891.

inserted more deeply than intended. It can be made aseptic by boiling, and I have even employed the spirit flame when prepared to remedy any damage it might cause to the insulation.

As I said before, buried vaginal puncture will reduce fibroids and remove pain when the intra-uterine method is not tolerated. I have, morever, never had a mishap or bad effect from its use, and have had pain following it on but one occasion, which was possibly due to a dispensary patient walking some distance home within an hour after the puncture. This freedom from mishaps I nevertheless attribute almost entirely to a careful selection of cases, as I can well conceive that the procedure would risk injury to important organs if employed in any case other than those in which the tumor is accessible by virtue of a practical protrusion into the posterior vaginal vault.

ABDOMINAL ELECTRO-PUNCTURE.

There is another form of buried puncture to which I wish to direct your attention particularly. I allude to insulated puncture through the abdominal wall. Abdominal electro-puncture has been condemned by myself, in unison with recent workers in electro-gynecology, but the thought occurred to me some months ago that my condemnation was of that unwise kind that precedes a trial, and that the bad results reported in the past occurred in pre-aseptic days. There are certain abdominal tumors of large bulk that are so far removed from the pelvic extremity of the cervix and vicinity of the vagina as to make intra-uterine treatment difficult, tedious, and painful, and vaginal puncture impossible. These tumors are beneath our hands externally, with nothing but a layer of fat and muscle and two layers of peritoneum intervening. As contrasted with the pelvic route, puncture from this direction is free from the embarrassing neighborhood of important organs, is direct and exact, but possesses the one disadvantage of being intra-peritoneal. Experience in two cases which have been punctured on several occasions, has convinced me that the peritoneal bugbear is overdrawn, at least when aseptic precautions are observed. Peritonitis and its effect, adhesion, can only follow the introduction of septic material, or a possible necrosis from a too strong positive puncture.

The details of the procedure as devised by me are as follows: The punctures being invariably negative, small steel needles are used, three at each puncture, attached by branched wires to a single pliant copper wire as a conducting cord. No. 22 or 24 insulated wire is much more convenient than an ordinary conducting cord. For the puncture-needles there can be no better form devised than the straight Hagedorn surgical needle found in every instrument-shop. These needles possess the advantage of great ease of penetration combined with lightness and strength, and the slit puncture made by them admits the increased bulk of the covering without hitch. This slit form of puncture also heals easily without a scar. The needle should be about two and a half inches long, the first half-inch from the point being left bare, and the portion above covered with hard rubber, vulcanized on the shank as thinly as consistent with good insulation. It is easily attached to the copper wire by the latter being passed through the eye and wound around the shank—by simple threading, in other words—or the needles may be permanently soldered to cord-tips, as suggested by Dr. Walling. These needles, properly insulated, sterilized, and attached to the negative pole of the battery by the branched wire, are easily and painlessly thrust into the tumor through the skin, the surface having been previously thoroughly asepticized by the most approved method, and just before the insertion of the needle chilled by a rhigolene spray. The current-strength has varied in my punctures between 60 and 100 ma., and the duration from six to eight minutes. After removal of the needles the minute spots made are sealed with a little borated cotton and plaster, or by the direct application of collodion.

As to frequency, it is probably best to allow at least two or three weeks to elapse between each application of electricity in this manner, although this depends on the size of the tumor and the field of tumor-surface accessible to the method. It need scarcely be said that no punctures should be made at any spot that might be covered by intestinal convolutions.

The immediate inconveniences that follow these punctures, such as tenderness and pain, are generally less than those following an intra-uterine application. As a measure of precaution, one patient under this treatment was kept in bed in the Sanatorium for twenty-four hours after each puncture, but another was punctured at the dispensary, and on each occasion walked home shortly afterward. In neither of these cases has sufficient time yet elapsed to permit a full determination of results, but in each case there has been a marked decrease in size, and in one case a lessening of the pain that had rendered the patient helpless. There has not been an unfavorable incident of any kind, and the absence of adhesions between the tumors and the abdominal walls is easily proved. The result, in my opinion, is to open anew the question of the propriety of employing buried abdominal electro-puncture in the treatment of those large fibroid tumors, both intra-mural and subperitoneal, that lie above the pelvic brim.

MICROCOCCUS PNEUMONIÆ CROUPOSÆ.

BY GEORGE M. STERNBERG, M.D.,
LIEUT.-COLONEL AND SURGEON U. S. ARMY.

SYNONYMS: *Microbe septicæmique du salivé* (Pasteur); *Coccus lancéolé* (Talamon); *Micrococcus Pasteuri* (Sternberg); *Pneumococcus of Fraenkel; Diplococcus pneumoniæ* (Weichselbaum); *Bacillus salivarius septicus* (Flügge); *Streptococcus lanceolatus Pasteuri* (Gamaléia).

The object of the present brief paper is to call attention to the earlier researches relating to the important pathogenic micrococcus to which it refers. This seems desirable at the present moment, inasmuch as the distinguished author of the Croonian Lectures, recently published in *The Lancet*, has given an account of the history of the micrococcus in question, in which he fails to recognize my priority in its discovery. He says:

"Its history is as follows: In 1881, M. Pasteur observed, to his surprise, in inoculating a rabbit with the saliva of a child affected with hydrophobia, that the animal died rapidly of septicemia. Subsequently Dr. Sternberg, of Washington ('Der Mikrokok der Sputum-septikämie,' *Deutsche med. Wochenschrift*, 1887, p. 44), having observed that the inoculation of pneumonic sputum induced in the rabbit symptoms similar to those observed by Pasteur ('Note sur une maladie nouvelle provoquée par la salive,' *Bull. de l'Acad. de Médecine*, 1881), repeated the experiment with his own saliva. As this animal also died of septicemia, he was led to investigate the subject bacteriologically, and found that in all the animals inoculated the same microzyme occurred, and that it corresponded with Pasteur's description of the *Microbe septicæmique du salive*." (Quoted from *The Lancet* of November 28, 1891, p. 1209.)

Now, as a matter of fact and of record, the present writer discovered the micrococcus in question in the blood of rabbits inoculated with his own saliva, in the city of New Orleans, in September, 1880, three months before Pasteur discovered it (December, 1880) in the blood of animals inoculated with the saliva of a child that died of hydrophobia in one of the hospitals of Paris.

At the date referred to I was not able to follow up my experiments immediately, as I was engaged in another investigation. But they are recorded, with the date upon which they were made, in my special report to the National Board of Health, on "Experimental Investigations Relating to the Etiology of the Malarial Fevers," which was submitted some time before the publication of Pasteur's note referred to by Dr. Burdon-Sanderson, and was published in the *National Board of Health Bulletin*, vol. iii, Washington, 1881–2.

Impressed with the surprising fact that my saliva contained a pathogenic micrococcus that quickly proved fatal to rabbits inoculated with the fluid containing it, I went to Philadelphia in January, 1881 (before the publication of Pasteur's first communication), for the express purpose of making further investigations with reference to this micrococcus in the laboratory of the Medical Department of the University of Pennsylvania.

"Here eleven inoculation-experiments demonstrated (*a*) that the virulence noted was not due to season or locality, as the same result followed inoculations made in Philadelphia during the winter months as had been obtained by similar inoculations in New Orleans during the heat of summer; (*b*) that this virulence was not an individual peculiarity, inasmuch as eleven rabbits inoculated with the saliva of six different persons, gave eight deaths and three negative results."

In March, 1881 (still before the publication of Pasteur's first communication), I resumed my experiments in the biologic laboratory of Johns Hopkins University, Baltimore, and by the inoculation of pure cultures obtained from the blood of infected rabbits, proved that the fatal septicemia induced in rabbits by inoculating them with my saliva was, beyond question, due to this particular micrococcus. I also determined many of its biologic characters, accurately described its morphology, and made photo-micrographs showing it in the blood of an infected rabbit. The results of this investigation are published in my paper on "A Fatal Form of Septicemia in the Rabbit, Produced by the Subcutaneous Injection of Human Saliva" (*National Board of Health Bulletin*, vol. ii, 1881; also, *Johns Hopkins University Stud. Biol. Lab.*, Baltimore, vol. ii, 1882, pp. 183–200, 1 pl.)

The publication of this paper was considerably delayed after I had completed my research, and in the meantime Pasteur had published his "Note sur une maladie nouvelle provoquée par la salive," referred to by Dr. Burdon-Sanderson.

My earlier researches were followed by others, in which I used this micrococcus as a test of the comparative value of various disinfecting agents,[1] and in the course of which I determined various points relating to its biologic characters.

In January, 1885, I made a series of experiments with pneumonic sputum, which led me to the identification of the oval coccus, usually in pairs, found in this material, with the micrococcus previously

[1] "Experiments with Disinfectants," Johns Hopkins Univ. Stud. Biol. Lab., Baltimore, vol. ii, 1882, pp. 201-212.
"Induced Septicemia in the Rabbit," Amer. Journ. Med. Sci., Phila., 1882, pp. 69–76.
"Germicide Value of Therapeutic Agents," Amer. Journ. Med. Sci., Phila., 1883, pp. 321–343.

isolated from my own saliva. In the paper[1] in which I gave an account of these experiments I named the micrococcus in question *M. Pasteuri*—a name that has not been generally accepted, and for which I now propose to substitute the name placed at the head of this paper, *M. pneumoniæ crouposæ*. In my paper last referred to, which was read before the Pathological Society of Philadelphia in April, 1885, and published in *The American Journal of the Medical Sciences* for July of the same year, I say: "It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia . . . . but this cannot be considered as definitely settled by the experiments which have thus far been made upon the lower animals."

Fraenkel's first paper[2] relating to the presence of this micrococcus in pneumonic exudate was published shortly after my paper last referred to.

Since the date last mentioned the extended researches of Fraenkel,[3] Weichselbaum,[4] Netter,[5] Gamaléia,[6] G. and F. Klemperer,[7] and others, have established the fact that this micrococcus is the usual cause of croupous pneumonia.

Recognizing this, we propose hereafter to designate it *Micrococcus pneumoniæ crouposæ*. This corresponds with the nomenclature adopted by Flügge in describing other pathogenic bacteria—*e. g.*, *M. gonorrhœæ*, *B. typhi abdominalis*, *Spirillum choleræ Asiaticæ*.

The name "diplococcus pneumoniæ," which has been adopted by most German bacteriologists, and following them by many English and American authors, is objectionable because this coccus is not truly a diplococcus, although commonly seen in pairs in preparations made from pneumonic exudate, or from the blood of an infected rabbit. But it is also frequently seen in short chains of three or four elements, and in cultures upon nutrient agar it often forms long chains. It is, therefore, more properly called a streptococcus. Gamaléia calls it *Streptococcus lanceolatus Pasteuri*. We prefer, however, the more general generic name, "micrococcus," and do not consider it necessary that the name should be descriptive of the mode of grouping of the cocci.

It may be questioned whether "diplococcus," as a generic name, is entitled to a place in our nomenclature. It simply represents a form of association that is common to all micrococci, although more persistent in some than in others, and which results from their multiplication by binary division. Now, some of the so-called diplococci multiply in one direction only, forming pairs, and longer or shorter chains, as in the case of the micrococcus under consideration; while others multiply in two directions, forming pairs and, by transverse division, groups of four—*e. g.*, *Diplococcus citreus conglomeratus* (Bumm), *Diplococcus roseus* (Bumm). Thus a most important generic character—division in one or in two directions—is ignored by those bacteriologists that use the term diplococcus as a generic appellation.

Again, some of the micrococci commonly described under the generic name "streptococcus" are seen, under certain circumstances, only, or chiefly, associated in pairs.

We object, then, to the use of the term "diplococcus," as a generic name for microörganisms of this class, as being unscientific and misleading.

[1] Paper published in the Transactions of the Pathological Society of Philadelphia, vol. xii, 1885; and in The Amer. Journ. Med. Sci., July, 1885.

[2] "Bacteriologische Mittheilungen," Verhandl. d. Vereins f. innere Med., July 13, 1885.

[3] Zeitschr. f. klin. Med., Bd. xi, 1886.

[4] Ibid., Bd. x, 1886.

[5] Comptes rend. Soc. de Biol., Paris, Nov. 4, 1887.

[6] Ann. de l'Institut Pasteur, t. ii, 1888.

[7] Berl. klin. Wochenschr., 1891, Nos. 34 and 35.

CLINICAL MEMORANDA.

A CASE OF HYDROGEN DISULPHIDE IN THE URINE.

By LOUIS KOLIPINSKI, M.D.,
of Washington, D. C.

A retired gentleman of sixty-seven, strongly addicted to alcohol, which had seriously undermined his robust constitution, had been treated for chronic gastritis, the result of the long-continued use of intoxicants. He had recovered sufficiently to digest bland food, when a return to his old habits soon caused a relapse. He developed insomnia, mental hebetude, and impairment of memory to such a degree that on one occasion, whilst about in the city, he was unable to find his way home. There had long been feebleness and unsteadiness in walking and complaint of shooting pains in the lower limbs, which, with a decided atrophy of their muscles, were ascribed to chronic alcoholic neuritis. His wife had noticed a slight evening fever, which at first could not be confirmed. There was complete anorexia, and with this there was an intermittent desire for strong drink. His feebleness confined him to bed, and apathy made him converse but little. Profuse nightly incontinence of urine alternated with a frequent desire to urinate by day. The prostate was moderately enlarged, but further urethral and vesical exploration was omitted, because of the man's general condition.

My attention had been called to the strong, peculiar odor of the urine before the symptoms of vesical disturbance began. On examination I found, June 5, 1891, the urine of a red color; acid reaction; slightly turbid; without sediment; specific gravity 1018; no albumin, bile, or sugar. By lead-acetate paper, H_2S was found to be present. A few epithelial cells were found.

For one month—during which time the patient improved so much that he was able to leave his bed, digest food, and take a renewed interest in the things of every-day life—the urine continued of the same composition. It was frequently examined, and with strict precaution as to its freshness, and the continuous presence of H_2S was uniformly detected. The question to be solved was, Where and how did the H_2S originate? The most plausible theory of intestinal decomposition and absorption was entertained and rejected, the evacuations being fairly regular and healthy. The speculation that its origin was from preëxisting cystin could not be proved by finding the latter, and finally the otherwise normal character of the urine excluded the assumption that it was a product of abnormal substances like albumin or pus. The books at hand helped me to no clue.

At the end of a month the patient's condition again grew worse. His bad symptoms were intensified, nocturnal fever returned, and the urinary incontinence grew annoying. A persistent hiccough gave the patient no rest. There now appeared a new light to clear up the mystery of the H_2S. The patient began to complain of pains about the anus at the site of a former ischio-rectal abscess. There was found on the right side around a small, circular cicatrix a moderate area of induration, extending forward to the scrotal fold, slightly tender and fluctuating. A free incision gave exit to about an ounce of pus having a strong odor of H_2S. The abscess was thoroughly washed out and left clean and dry. The hiccough had now continued for twenty-four hours.

The night of this day (July 4th) the patient was comatose, with a rising axillary temperature of 104° F.; the pulse was 140, the respiration 44. The hiccough was still present. The skin was burning hot; the body entirely relaxed; the soles of the feet responded to irritation. The bladder was emptied by catheterization twelve hours after the abscess had been opened, and the urine thus collected was found to present these characteristics: color red; acid reaction; specific gravity 1019; slightly turbid; opaque sediment; H_2S present; a trace of albumin; indican in excess; granular epithelium, and blood-corpuscles.

With the removal of the catheter the hiccough, continuous for over forty-eight hours, ceased. The status of the case was sufficiently desperate to justify a fatal prognosis. The man was, however, treated with repeated enemata of caffeine and antipyrin (total, twelve grains of caffeine and thirty grains of antipyrin). In a few hours he showed slight symptoms of improvement, the temperature becoming stationary and then declining, so that at 4 A.M. he was conscious. The next day the thermometer did not rise above normal. The patient conversed with his family, recognizing each and saluting them individually, but at intervals became lost in a mild delirium. There were persistent efforts to eject mucus from the throat. He took fluid nourishment readily. Toward noon and again toward evening he vomited large quantities of altered blood. On the following day diarrhea set in; the stools were offensive and contained undigested material, showing the existence of gastro-intestinal indigestion. Bismuth and opium stopped the discharge. The urine contained an excess of indican, but was otherwise normal. H_2S was not again found in it. The delirium was worse at night. The man at times complained of abdominal pains, and the inguinal and hypogastric regions were slightly tender; the respiratory and heart sounds were normal; the skin was not jaundiced; the face had an ashy hue, with darker pigmentation of the eyelids. There was occasional hiccough. The fever now returned and the patient grew drowsy and soon could be aroused only with difficulty. Incontinence of urine became complete.

On the 13th of July he was unconscious, the temperature at its maximum being 103° F. The body was bathed in profuse sweats; the left half felt cooler than the right, and lay as in cerebral hemiplegia, but there was no paralysis. This state became intensified, and the patient expired quietly on the 15th.

The symptoms as narrated, and as they successively presented themselves, added additional interest to the case. The intense febrile reaction, the apparent improvement and the fatal return of the typhoid symptoms made the diagnosis obscure.

The autopsy, which was confined to the abdominal cavity, showed a dilated stomach, its mucous membrane, as well as that of the small intestine, containing spots and patches of extravasated blood. The kidneys were cirrhotic, the right containing several small cysts and calcareous infarctions. The liver was in a state of fatty degeneration, but not markedly diminished in size; there was little evidence of cirrhosis. The spleen was dark and friable and not enlarged. In the gall-bladder was a little pale bile and two small calculi. The skin was of a natural color, and there was no fluid in the abdominal cavity. The ischio-rectal abscess was thoroughly explored and found empty and granulating. The bladder was contracted, and there was no induration or inflammation in its neighborhood. It appears, then, that acholia was the cause of death. The absence of icterus was a singular feature.

The urine in this case was especially instructive. Standard works furnish scant information on this subject, or none at all. This is particularly true of works on urinary analysis. Here was an old ischio-rectal abscess (the residual variety of Pajet), for a long time manifesting itself only by the presence of a decomposition-product in a natural secretion.

PERFORATING WOUND OF THE RIGHT LUNG; RECOVERY.

BY GEORGE EVANS READING, M.D.,
OF WOODBURY, N. J.

ON October 2d, in my absence, an urgent message was left at my office, to come at once and see R. E. G., who, it was stated, "was dying." I had, on previous occasions, attended the man for severe attacks of intestinal colic, and jumped to the conclusion that the present trouble was of a similar nature.

On reaching his home, three miles out of the city, I found that the man was suffering from injuries caused by the horns of a vicious bull that had attacked him, tossing and goring him several times. The man was seated in an easy chair, in a condition of decided shock, the surface of the skin covered with a clammy sweat, and the pulse almost imperceptible at the wrist. The respiration was rapid and shallow. Any attempt to assume the recumbent posture brought on an attack of suffocation.

I immediately administered a hypodermatic injection of morphine sulphate, gr. ¼, with atropine sulphate, gr. $\frac{1}{100}$. Respiration and circulation soon improved.

Put to bed and examined, it was found that the body was covered with scratches and bruises; on the right side of the thorax was a wound three inches long, the center of which was two and a half inches below the right nipple. Through this wound, air was expelled with each expiratory act, but little or none entering during inspiration. The wound had evidently been bleeding profusely, as the patient's clothing was saturated with blood.

The skin and superficial fascia were torn from the ribs for some distance above and at each extremity of the external wound; in the fourth interspace, almost exactly beneath the right nipple, was an opening through which the air was escaping. The wound in the intercostal muscles was three-fourths of an inch in diameter; it evidently communicated with one or more of the larger bronchi, as there was a free passage of air through it during both inspiration and expiration, when the overlying tissues were held up; but when these tissues were undisturbed they acted as a valve and prevented the entrance of air during inspiration. There was a slight prolapse of lung-tissue into the wound in the intercostal muscles, but, as the tissue did not project beyond the outer surface of the ribs, it was deemed best to leave it undisturbed. There was no evidence of hemorrhage into the pleural cavity.

The wound was thoroughly irrigated with a hot one-to-one-thousand solution of corrosive sublimate. A firm, thick pad was placed over the wound in the lung. A bundle of No. 8 iron-dyed silk was laid at the bottom of the external wound, to afford drainage, and the wound was closed by means of interrupted silk sutures. The area of the injury was covered with a pad wrung out of a one-to-two-thousand solution of mercuric chloride; this, in turn, was covered with a dry pad extending some distance in every direction beyond the periphery of the former, and the whole dressing secured by a wide bandage applied around the chest and over the shoulder in such a way as to limit as much as possible the movement of the ribs on the injured side.

At the end of an hour, as the patient still presented symptoms of shock, the hypodermatic injection of morphine and atropine was repeated, and alcoholic stimulants were ordered. At 3 P.M.—eight hours after the accident—the patient had not yet fully reacted; the temperature was 97.5°, and the pulse was 60. By 10 P.M. reaction was fully established, and the temperature had reached 99.5°. The temperature reached 100.5° at three o'clock the next afternoon, but by 10 P.M. it had receded to 99.5°, and it never again reached 100°. It remained in the neighborhood of 99.5° for four days, when it became normal in the morning; three days later—one week after the injury was received—the evening temperature was also normal.

The first dressing was not disturbed for one week. Upon its removal it was found that the wound had united by first intention, except at the posterior angle, which was kept open by the silk strands used for drainage. These were now removed, and the wound washed out with a one-to-two-thousand bichloride solution, and the dressings were re-applied. This dressing was also left in position for one week; upon its removal the wound was found to have healed solidly throughout, and the sutures were removed.

Not one drop of pus formed during the whole course of treatment; the total amount of drainage was only sufficient to soak through two layers of Canton flannel (of which the pads were composed, no better material having been at hand), over an area five inches long by two inches in width.

Convalescence was uneventful, except for an attack of intermittent fever that developed four weeks after the injury was sustained. This yielded readily to quinine and arsenic. Ten weeks after the injury was received, the man was attending to his usual duties.

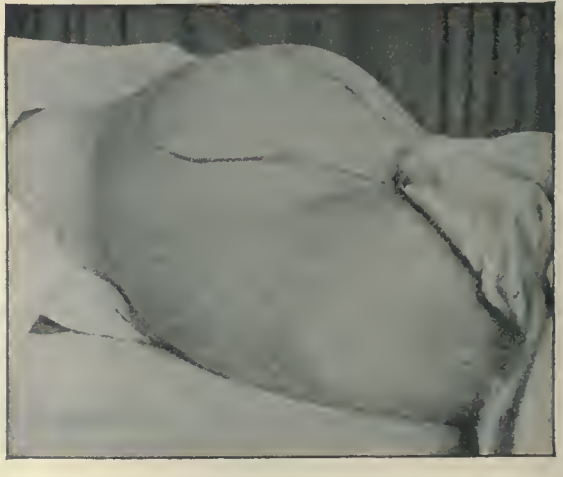
REMARKS.—The fortunate issue in this case was largely due to the fact that the wound was of such a nature that the skin and superficial fascia could be used as a valve to close the opening in the lung, so that the task of rendering the wound aseptic was an easy one, so far at least as direct contamination was concerned. The fact of the patient being in the pure air of the country was an important factor in the result, as thus the risk of septic inoculation of the wound by the way of the air-passages was reduced to a minimum. The small amount of blood that escaped into the pleural cavity also had an important bearing upon the result, for with a large hematoma of the pleura the patient would have had a greatly diminished chance of recovery.

179 SOUTH BROAD STREET.

TYMPANITES AND PREGNANCY.

BY BARTON COOKE HIRST, M.D.,
OF PHILADELPHIA.

ONE will find in almost all text-books on obstetrics the rules for differentiating tympanites from pregnancy, Winckel's book being a notable exception; but nothing is said about the coëxistence of the two, although the diagnosis may be much obscured if the abdominal



cavity is greatly distended by flatulence and at the same time contains a pregnant womb. While demonstrating abdominal palpation to a small class, the individual represented in the photograph was brought before me. On first palpating the abdomen, it occurred to me that the woman was not pregnant at all, as I could feel nothing

distinctive, and percussion yielded a tympanitic note all the way down the median line to the symphysis. On more careful palpation, however, a tumor was distinguished on the right side of the abdominal cavity corresponding in size and shape to the gravid womb near term. On auscultation, the fetal heart-sounds were heard far to the right. On percussion, there was an area of dulness (marked on the photograph) which, it may be observed, was confined entirely to the right side. The abdominal walls were so tense that it was quite impossible to feel any characteristic parts of the fetus. As may be seen in the photograph, the distention of the abdomen is perfectly symmetrical. The presence of the pregnant uterus is masked on account of the greater distention by the inflated intestines. On careful percussion and palpation, it could be demonstrated that coils of intestines overlapped the uterus on the left, so that the area of dulness did not represent the true width of the uterus. I have seen the intestines in front of the womb in only one other case, in which the girl had laced so tightly that the uterus at the sixth month was reduced to about four inches or less in breadth, but was lengthened almost to the liver, the upper part above the umbilicus being covered by intestines.

By the coëxistence of tympanites and pregnancy, the abdomen (as can be seen in the illustration) is naturally very much enlarged, presenting the following measurements:

Circumference	117 cm.
Symphysis to umbilicus . .	21 "
Umbilicus to ensiform cartilage .	23 "

It would be very easy to overlook pregnancy in such a case, especially before the sixth month, when the uterine tumor would scarcely be appreciable by palpation, except under ether and with deep pressure, and even so might be indistinguishable. Indeed, I understand that this woman had applied for admission to the Philadelphia Hospital some months before, and had been turned away, as she was declared to be not pregnant.

NEW INSTRUMENTS.

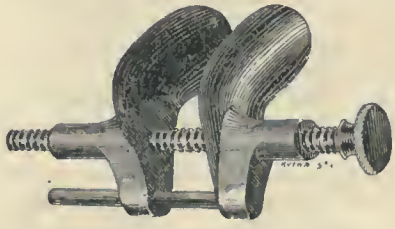
A NEW NASAL SPECULUM.

BY H. N. SPENCER, A.M., M.D.,
PROFESSOR OF DISEASES OF THE EAR IN THE MISSOURI MEDICAL COLLEGE AND ST. LOUIS POST-GRADUATE SCHOOL OF MEDICINE.

IN the present state of otological practice a nasal speculum is quite as much a necessity as an aural speculum.

For mere inspection and for much practical work, I have found the conical form, a modification of the aural speculum, to answer a good purpose. I described this instrument in 1879 in an article on the "Mechanics of Naso-pharyngeal Practice."[1] There are instances, however, especially in operative procedures, in which this does not fulfil all of the requirements, the dilatation being necessarily limited. The objections to the specula at our command—Thudichum's, Fränkel's, Duplay's, etc.—are generally so well understood that it is unnecessary to recite them. The instrument presented herewith has grown out of my own necessities, and I submit it for the consideration of others.

As represented in the cut, the two blades travel on a right and left thread-screw. One-half the length of the screw has a right-hand and the other a left-hand thread. There are twenty-four threads to the inch, and pitched in opposite directions: it is evident that every complete revolution of the screw will separate the blades one-twelfth of an inch. If a more rapid operation of the blades should be desired, a screw of greater pitch would effect it. The blades are so adjusted on the screw that they will come together where the right- and left-hand threads meet. This relative position is constantly maintained by means of the small guide-rod that appears in the cut running parallel with the screw. One end of the guide-rod is made fast in the lug of the blade nearer the knob-end of the screw. The other end travels freely through the lug of the opposite blade.



The threaded portion of the instrument is made quite long to insure easy working and to resist the twisting strain to which the blades are subjected. This, also, is a precaution against wear. The screw is made of hard steel, which contributes further to strength and durability. The mould of the outer aspect of the blades, slightly flaring at the extremity, makes the instrument self-retaining.

The instrument when in position rests upon the upper lip. In patients with mustaches, I have found a still further advantage to accrue from placing the screw and guide-rod below the blades. The mustache is thus held out of the way, in this way often sparing annoyance to the operator.

[1] St. Louis Courier of Medicine, July, 1879.

MEDICAL PROGRESS.

The Causes of Failure to Abort Syphilis by Excision of the Initial Lesion.—Excision of the chancre in the hope of aborting syphilis is an old procedure that has at times been quite extensively practised. It has, however, never gained a permanent foothold; of a total of about 460 cases on record, in only 106 have successful results been claimed. By far the larger number of syphilographers of to-day are opposed to the practice, but among the minority who still adhere to it is the learned syphilographer of Paris, JULLIEN, who, in a recent article based upon an extensive experience, says: "I believe in the possibility of interrupting or attenuating the course of syphilis at the time of the initial sclerosis; we should not fold our arms during the period in which a patient's existence is to be decided, or think that all is lost before anything has been commenced."

TAYLOR (*Medical Record*, 1891, No. 1078) has reported a series of cases illustrative of the inutility of

excision of the chancre. In one case, a minute papule was first observed twenty days after the patient had indulged in sexual intercourse with a syphilitic. The sore was touched with pure nitric acid, and the greatest care was exercised to secure thorough removal of the lesion without contaminating the adjacent healthy tissues. The wound healed kindly; yet, notwithstanding the precautions that had been taken, the inguinal ganglia were typically enlarged thirty days after operation, and twelve days later general syphilitic manifestations appeared. In the second case, a minute fissure appeared on the dorsum of the penis seventeen days after sexual intercourse with a syphilitic. A piece of skin including the fissure, measuring half an inch by three-quarters of an inch, was excised. Healing was uninterrupted, and the scar showed no induration; but, twenty days after the operation, there was well-marked inguinal adenopathy, and, subsequently, the usual secondary manifestations appeared. In the third case, an examination preliminary to the performance of circumcision revealed the presence, on the free border of the prepuce, of a small, brownish-red, not excoriated papule, about the size of the head of a small tack, which had appeared on the preceding day, two weeks after sexual intercourse. The operation was performed four days later. At this time there was no perceptible enlargement of the inguinal ganglia. As the prepuce was quite redundant, fully an inch and a half of tissue was removed; healing was prompt, without induration of the cicatrix. Thirteen days after the operation, inguinal adenopathy was quite evident. Thirty-two days later a typical roseola appeared; shortly before this, minute hard cords could be detected on the dorsum of the penis. On microscopic examination of the excised portion of the prepuce, there was found at the site of the initial lesion a small, superficial, and sharply-circumscribed ulcer, surrounded by almost normal skin, except that the peri-vascular spaces were distended with small round cells, and the endothelial cells lining the arteries and veins were swollen, and appeared to be proliferating. This cell-investment extended a considerable distance beyond the ulcer. This condition of the bloodvessels seems to show that when the primary sore is quite small and of only a few days' duration, syphilis is deeply rooted and, in all probability, has involved the vessels even before the appearance of the sore.

For comparative purposes, microscopic examination was made of a prepuce upon the lower part of which, near the frenum, was a typical hard chancre of ten days' duration. It was found that at a distance of fully an inch and a half from the chancre, the cell-changes around the vessels were very decided, the cells being in process of active proliferation. As an instance of the great rapidity of the syphilitic infection, reference is made to the now classical case reported by Berkeley-Hill, in which thorough cauterization of a lacerated frenum, within twelve hours after coitus, proved powerless to prevent the development of syphilis. As a further confirmation of the view that the process of infection in syphilis is from the beginning one of constant growth and diffusion, reference is made to the observations of Küleneff on the so-called lymphatic cord of syphilis. The cords were excised from the dorsum and sides of the penis in five cases, in which the chancres were of from a fortnight's to two months' duration. These cords were found to be dependent upon syphilitic endo-phlebitis and peri-phlebitis, the morbid process commencing primarily in the wall of the vein, probably in the inner coat. The tendency of the cell-infiltration to pass into young connective-tissue elements seems to indicate that the nature of the morbid process is identical with that of the initial syphilitic sclerosis; and, according to Küleneff, the development of this cord should be regarded as an early manifestation of vascular lesions in syphilitic patients.

In view of the facts, it seems probable that, contrary to the views heretofore held, in the first period of incubation, the infectious agent of syphilis is being rapidly diffused, instead of, as formerly supposed, smouldering in a cold and aphlegmasic manner in a sharply-limited area.

The Therapeutic Applications of Hydrogen Dioxide.—Richardson (*Asclepiad*, 1891, viii, 32) gives a number of formulæ containing hydrogen dioxide, together with the indications for their employment. Each dose contains a little more than three drams of ten-volume hydrogen dioxide and a dram or two of pure glycerin and is made up to an ounce by the addition of distilled water. The dose should always be well diluted. For the colliquative sweating of pulmonary tuberculosis, fifteen minims of dilute sulphuric acid are added. When a tonic is desired, as in the course of influenza, a grain of quinine, with three or four minims of dilute hydrochloric acid, are added; if an anti-periodic is desired, five grains of quinine may be added. For hemoptysis and analogous forms of hemorrhage, fifteen grains of tannic acid, with or without sulphuric acid, may be added. In case of cough, preventing sleep, as in chronic and asthenic bronchitis and in pulmonary tuberculosis, an eighth or a quarter of a grain of morphine sulphate from three to five minims of dilute hydrochloric acid, and a dram of syrup of tolu are well added. In diabetes, it is useful to add a quarter or an eighth of a grain of codeine, a small proportion of a mineral acid, and a dram of alcohol. In cases of asthenia and anemia, the addition of ten minims of dilute phosphoric acid and of a grain or two of iron pyrophosphate, with the addition of from five to ten minims of tincture of digitalis, if the action of the heart is rapid and feeble, will prove serviceable. When indicated, ten minims of dilute phosphoric acid, a grain of quinine, and a grain or two of iron pyrophosphate may be added to the dose; a dram of alcohol and a thirty-second of strychnine may be additionally conjoined. The mere addition of half an ounce of alcohol makes a combination that may be usefully employed as an anti-spasmodic or as a menstruum for the administration of other substances that are soluble in alcohol and do not readily undergo decomposition in the presence of oxygen. Three or four minims of amyl nitrite may yet be profitably added. A dram of ozonic ether may sometimes be advantageously substituted for the hydrogen dioxide. Thirty minims of ozonic ether and a dram of syrup of tolu in glycerin and water are most effective in pertussis. The addition of a minim of creasote to the dose of hydrogen dioxide makes a useful antiseptic, deodorant, and anti-spasmodic, especially in fermentative dis-

orders of the stomach. For salivation, five minims of the solution of potassium arsenite may be added to the usual dose of hydrogen dioxide.

A gargle may be made of—

Tannic acid . . .	10 grains.
Pure glycerin . . .	1 ounce.
Alcohol	4 fluiddrams.
Distilled water . . .	4 fluidounces.
Solution of hydrogen dioxide (10 vol.) sufficient to make . .	8 fluidounces.

A useful collyrium may be prepared by combining:

Solution of hydrogen dioxide (10 vol.) . .	4 fluiddrams.
Pure tannic acid . .	5 grains.
Rose-water sufficient to make	8 fluidounces.

An evaporating lotion may be made of—

Alcohol	4 fluidounces.
Anhydrous ether . .	1 fluidounce.
Distilled water . .	4 fluidounces.
Solution of hydrogen dioxide (10 vol.) sufficient to make . . .	12 fluidounces.

For inunction of the skin in cases in which desquamation occurs, as in scarlatina, an ointment may be prepared by rubbing up ozonic ether with spermaceti ointment, so as to form a thin paste; this may, if desired, be rendered thick by the addition of more spermaceti, or thin by the addition of olive oil.

Dissecting Aneurism of the Ascending Aorta in Association with Chronic Nephritis; Rupture into the Pericardium.—At a meeting of the Berlin Society for Internal Medicine, TROJE (*Deutsche medicin. Wochenschr.*, 1891, No. 46, p. 1271) presented the specimens obtained from a woman fifty-six years of age who, four years previously, was seized with apoplectic symptoms from which she recovered. Three years later, the patient developed uremic coma in conjunction with symptoms of chronic nephritis, and was successfully treated. Some nine months before death, she again came under observation on account of increased dyspnea, sleeplessness, and edema. The physical signs indicated the existence of aortic incompetence and moderate hypertrophy of the heart. There existed, in addition, the symptoms of a chronic, diffuse nephritis. The radial arteries were tense and tortuous. The urine was subnormal in quantity and contained considerable albumin. There was also albuminuric retinitis. Death took place during a uremic attack attended with convulsions. At the autopsy, in addition to the evidences of cardiac hypertrophy and aortic insufficiency, an oblique rupture of the internal and middle coats of the aorta a short distance above the semilunar valves was found. Through the rupture a large volume of blood had found its way beneath the pericardium covering the great vessels and into the pericardial cavity, entirely enveloping the heart. The aorta was slightly thinned and dilated at the seat of rupture, but otherwise normal, although atheromatous beyond and behind. The coronary vessels were also atheromatous. The kidneys were contracted and contained cysts; the capsules were adherent; the surface of the organs was irregular; the cortex was diminished. The occurrence of dilatation, thinning, and rupture is made dependent upon the impact of the current of blood projected by an hypertrophied heart under conditions of increased arterial tension.

Puerperal Eclampsia.—In addition to seven cases previously reported, HERMAN (*Transactions of the Obstetrical Society of London*, 1891, xxxiii, 3, p. 315) reports five more cases of puerperal eclampsia, in which special attention was directed to observations of the temperature and of the urine. Four mothers died; eight recovered. Six living children were born; four died *in utero*; one was not viable; one patient died undelivered. There was no evident relation between the paroxysms and the temperature. The quantity of urine was diminished in all but two of the cases observed from the beginning of the disease. Of the two exceptional cases, one died; in the other, evidences of renal disease persisted after childbed. In all of the cases, the excretion of nitrogenous matter in the urine was absolutely diminished, and in most the percentage as well was diminished. At some time in all, the urine contained albumin in large quantity. In three, the proportion of albumin appeared to be increased in consequence of the paroxysms. Two cases in which the precipitate of albumin contained the largest proportion of paraglobulin recovered. Of three cases in which the proportion of paraglobulin was smaller than in the rest, two died; while in two the evidences of renal disease persisted. In all of the cases that recovered, there was rapid increase in the quantity of urine and in the proportion of contained nitrogenous matter and a diminution in the proportion of albumin. This restoration did not, as a rule, take place until some hours after the cessation of the attacks, and in the cases in which cessation of attacks preceded delivery, progressed more rapidly after delivery. This restoration of renal function failed to take place in the cases that died. Retinitis was present in only two cases, both of which terminated fatally.

Potassium Cantharidinate in the Treatment of Pulmonary Tuberculosis.—After the tentative employment of subcutaneous injections of potassium cantharidinate in sixteen cases of pulmonary tuberculosis in various stages of the disease, FENWICK and WELSFORD (*British Medical Journal*, No. 1617, p. 1349) conclude that the remedy is absolutely useless to produce any obvious beneficial effect. In moderate doses it is likely to give rise to albuminuria, or even hematuria, with strangury and pain in the loins.

Fatal Poisoning by Magnesium Sulphate.—SANG (*Lancet*, No. 3558, p. 1037) has reported the case of a woman, aged thirty-five years, that shortly after taking four ounces of magnesium sulphate dissolved in hot water, was seized with burning pain in the stomach and bowels, with difficulty of breathing and a sense of weakness in the extremities. The mucous membrane of the tongue and mouth was intact. There was neither nausea nor vomiting nor purging. Collapse set in and the patient died comatose. Death was ascribed to a direct action upon the cerebro-spinal system.

The Antiseptic Treatment of Burns.—In the treatment of burns, especially those that exceed the second degree, MAYLARD (*Glasgow Medical Journal*, 1892, xxxvii, 1) recommends that such clothing as can be conveniently removed be taken off; if adherent, it should be cut away. The wound is washed with a warm 1 : 2000 solution of mercuric chloride; then covered with perforated protective (oiled silk) that has been steeped in the mercuric solution; over this is placed a layer of borated lint wrung out of mercuric solution; finally, a covering of gutta-percha tissue is applied. The dressing is enveloped in sublimated "Gamgee" tissue and secured by means of a bandage. The dressing is to be renewed as soon as it becomes saturated with secretion. The protective may sometimes be omitted. The advantages claimed for this method of treatment are that the parts sterilized by the burn are kept sterile; inflammation is subdued and tissue-destruction prevented; discharge is diminished; dressings are infrequent and attended with little or no pain; there is an absence of offensive odor; necrotic tissue is rapidly thrown off by healthy granulations; the resulting cicatrix is the smallest possible; constitutional symptoms are reduced to a minimum.

A Swallowed Plate of False Teeth Passed by the Bowel.—ROSENZWEIG (*British Medical Journal*, No. 1614, p. 1204) has reported the case of a man who was awakened from an after-dinner nap by a sense of suffocation and pain in the throat, while a plate of false teeth that he had worn was missing. The throat was red and irritable, but no laceration or hemorrhage was detected. Solids and liquids could be swallowed freely and without pain. A sponge-probang passed readily into the stomach. The patient was directed to go to bed and to adopt a restricted diet. For three or four days there was considerable hypogastric pain, with alternate diarrhea and constipation. At the end of three weeks the patient would no longer remain in bed, and resumed his ordinary diet. Seven weeks subsequently to the accident, some time after a long drive, he was seized with severe abdominal pain, and after considerable difficulty and manual assistance the plate of teeth was passed *per anum*. The teeth were attached to a gold plate, the whole measuring 2¼ inches in its longest diameter, 1¼ inches in its shortest diameter, and ¾ of an inch in its greatest thickness.

Visceral Hemorrhages in Stillborn Children.—In an exhaustive paper, SPENCER (*Transactions of the Obstetrical Society of London*, 1891, xxxiii, 3, p. 203) presents an analysis of the findings in one hundred and thirty autopsies in children stillborn or dying shortly after birth. He found congestion or edema and hemorrhages in various viscera the rule. Hemorrhages were present in cases delivered naturally or by version or by forceps, through normal and abnormal pelves; in primiparæ and in multiparæ; with large and with small children; in easy and in difficult, and in rapid and in protracted labors. Hemorrhage was most common and most profound in children subjected to pressure in the birth-canal, or by instruments or by the hand of the attendant, especially when delivery was effected by a lower extremity. Cerebral hemorrhage was more frequently found in stillborn children delivered by the forceps than in those born by the breech, and in those delivered by the breech than in those born naturally by the head. Hemorrhage into other viscera was more common in labors in which the presentation was pelvic than in those in which the presentation was cephalic. The hemorrhage and the accompanying injury were, in many cases, the cause of stillbirth; when not immediately fatal, they were attended with the gravest consequences. The accident is to be avoided by preventing premature rupture of the membranes; by artificial dilatation of the birth-canal, when necessary; by restricting the employment of version and other artificial manipulations to urgent cases; and by preferring cephalic to podalic version in suitable cases. The employment of the forceps should be absolutely limited to cases in which there exists some pressing danger to mother or child; the forceps should never be employed merely to shorten the time of labor. In breech-presentation, examination of the genital organs of the child should be sedulously avoided during delivery. As soon as the lower extremities are born they should be wrapped in antiseptic wool (which keeps the child warm, prevents the grasping hand from slipping, and protects the parts from pressure). If traction be necessary, it should be made over wool wrapped around the child's limbs or pelvis; it should never be made by the hand surrounding the child's waist. In delivering the after-coming head, care should be taken that the sterno-mastoid muscles are not unduly stretched or compressed. When the after-coming head is in the pelvis, and there is even slight difficulty, the forceps should be resorted to.

Post-paludal Pneumonia.—HADJI-COSTA (*Revue de Médecine*, No. 11, 1891, p. 927) has recorded ten cases of pneumonia in individuals presenting a history of malarial infection. His observations lead him to believe that chronic impaludism predisposes to the development of a pneumonia characterized by a special train of symptoms. The invasion is usually insidious. The classical symptoms of a frank pneumonia, such as dyspnea and pain in the side, are mild or wanting. In addition to the chronic congestion of the miasmatic affection, organic and functional derangements of the abdominal organs are common. Nervous and adynamic symptoms predominate. Resolution is often delayed. Suppuration may ensue. The mortality is high. Treatment by means of quinine and alcohol exercises a most favorable influence upon the course of the disease.

Hemorrhagic Purpura, with a Tumor of the Thymus Gland.—NASON (*British Medical Journal*, No. 1617, p. 1352) has reported the case of an adult male who presented epistaxis, hematuria, and a purpuric eruption; death took place in coma. At the autopsy, in addition to extravasations of blood in many superficial and deep structures, a large extravasation was found occupying the right frontal lobe of the cerebrum. Numerous small hemorrhages were found in other parts of the brain. In the upper portion of the mediastinum was found a large lympho-sarcoma occupying the site of the thymus gland. A possible relation is suggested between the lymphoid cells supplied to the circulation by the thymic tissue and the development of purpura.

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OF MEDICAL SCIENCE.

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SATURDAY, FEBRUARY 6, 1892.

DUTIES OF THE YOUNG PRACTITIONER.

THE young practitioner, settling in the larger towns and in cities, first of all desires to secure a practice; he wishes, so soon as possible, professional success. How shall he attain it in the best and most enduring form? Let us leave out of consideration practice in the country, where the aspects of the problem are somewhat *sui generis*, and let us also suppose that the young physician has been properly educated, and has an adequate intellectual equipment for his calling. It also goes without saying that, though perhaps a little slow in coming, success will more certainly come to the gentleman—the man who is respectful, self-respecting, well-bred—than to one not a gentleman. The commonest patient at once recognizes the boor turned doctor, while the most vulgar reverence gentle strength in their physician, and therefore give him confidence—and calls.

But to himself, his colleagues, and associates, and to his profession, what are some of the chief duties of the young practitioner?

First and foremost, that he make haste slowly; that he be content to wait. Many, even most of the present professional evils that bring disgrace upon physicians and their calling are due to the feverish desire for quick success. Policy aside, it is one of the duties and glories of our work to administer rebuke to the world, the rule of which is *Success at any cost*, by duty quietly done and self-renunciation habitually performed in the interest of humanity and of dignity. The desire to get on, the need of money, the wish to reap reward for the long years of study and hope deferred, are powerful motives, and must be allowed their legitimate and proper sway. It is hard to act upon the evident truisms that the best fruits ripen slowly; that deserving somehow and almost always gets its desert; that slow success is usually far better than quick success. The last point is especially true in view of the fact that the young physician should have much leisure for needed study, for filling the blanks in his knowledge, for thoroughly examining and deepening his comprehension of every case of disease that comes under his care.

Too much haste, for example, leads him to adopt the vile methods of advertising that have often besmirched honor and blocked the way to enduring and deserved success. Let him beware of the daily paper and of the reporters. These gentlemen detect at a glance whether one wishes sneakingly to advertise or not. If one determinedly and absolutely refuses them the privilege of using his name about professional opinions, his surgical operations and cures, they dare not disobey. We all know that the physicians whose surgery and skill are heralded in the penny press, are so advertised by their own will and doing, and quite as well do we know that the act and fact, however much money it brings, brings also dishonor and the contempt of one's professional fellows. It is poor policy in the long run.

The young physician in a city will probably seek connection with the out-patient department of some hospital or dispensary. But, for Heaven's sake, don't let him start a new institution of this kind! We are developing a genuine hospitalomania. The need of hospitals was at one time so great that, satisfaction long since attained, the historic momentum goes on with blind fury to self-destruction. The desire of the young practitioner for patients and experience drives him into this field—the abuse of which is his own professional suicide. If the older visiting physicians will not coöperate to limit the abuse, let him seek to do it himself. The way out is not to treat the poor out-patient hospital visitor brutally and ungently, and the well-to-do patients (at present a large and increasing proportion) with an assumed and interested politeness, teasing them

to the private office on shallow pretexts. There can be no doubt that the crowds of out-patients that now have to be treated in an hour or two leads to diagnostic and therapeutic negligence that does patient and doctor each an injury. The evil must and will be remedied. Better that it be remedied soon and spontaneously than when it becomes a public scandal. Let no treatment be given when there is a reasonable belief that the patient can pay a small fee outside.

It is of the utmost importance that the young practitioner do not make the mistake of consorting and consulting with quacks. When quackery, as in homeopathic practice, is semi-fashionable, and some medical hybrid, occupying a doubtful position, wishes to bolster himself by the help of a regular practitioner, it is a great temptation to the younger man to accept the bribe. But there is no surer way to damage reputation and block professional advancement. Despairing pessimists and their natural but unknown allies, the quacks, may declaim that medical ethics have gone to the dogs and all that, but it is not so. If medical ethics have "gone to seed," then it is because the process of going to seed is preliminary and necessary to planting, and it conforms to the enthusiasm and function of the young to plant the seed, not to intone dirges. The seed needs soil; a little medical market-gardening and manuring will bring a new crop. It is not true that medicine is a business or only a business. Those that say so are stock-brokers and politicians turned physicians, and showing the cloven hoof of their ancestry. They will some day find a rude awakening from the shallow dream.

A very helpful condition of success is a good outfit of instruments, chosen with care, and especially with the advice of some older physician.

Not less necessary is a good reference library of new and authoritative medical books. A most needed and noble foundation would be a charity-fund to supply deserving young graduates with cyclopedias and standard treatises that epitomize modern medical science and research. The consultation of such works would often illumine an obscure case, obviate accidents and mistakes, save life, and be a daily means of professional progress and success.

Two, three, or more standard representative medical journals should also be subscribed for. No physician should be without either *The Lancet* or *The British Medical Journal*, and of our own country's journals, *The New York Medical Journal* or *The Boston Medical and Surgical Journal*, etc., should be taken. An excellent plan is to form journal and magazine clubs whereby at a minimum of expense, a large number of weekly and monthly journals may be passed among the club members. But in choosing journals those should be rejected that by reading notices and "puffs" of proprietary preparations and nostrums show that they are the mere agents of advertisers; and those that by silence as to quackery and medical abuses prove that it is not medicine but the growth of their subscription-lists and the sale of books that are the concealed motives of editor and publisher.

Finally, it may be urged that the young practitioner should continuously seek the advice and even the tutelage of the wiser and more experienced, long-established practitioner. Cases will be encountered that will puzzle the mind of the young practitioner or will baffle his skill. The practice of frequent consultations is eminently wise and greatly to be advised. It is to the advantage both of the patient and of the physician. It leads to a surer progress in the young, encourages a very desirable, much-needed professional *esprit de corps*, and makes medical progress more steady and assured. A condition, however, is that consultation fees shall be lowered. It is neither just to the patient, nor wise as a part of professional policy, greatly to increase the expense of dual advice. There is no reason why a consultation fee should be double or treble the customary fee; rather should it be less. But in this we trench upon another aspect of the question—the duties of the elder to the younger practitioners—left for future consideration.

THE PAN-AMERICAN MEDICAL CONGRESS.

THE Pan-American Medical Congress that will assemble in Washington in the first week of September, 1893, will, in all respects, be an occurrence of extreme interest and importance to the medical profession of the United States, and of all the countries associated in the movement. It is fortunate that a period has been chosen that will in no way conflict with the meeting of the International Congress at Rome, in the same year. From the latest authentic information as to its exact date, the latter meeting will occur in the last week of September. This is, indeed, quite as early a date as would commend itself for a large meeting in Rome. It will enable those that desire to attend both of these congresses, and to visit the World's Fair at Chicago,

which promises to be of so much interest and importance, to do so without difficulty, whether they come to this country from Europe, or from one of the South American countries, or are members of the profession in the United States. For the physician and scientist we believe the World's Fair will be found to have more importance than any previous similar exhibition.

It is evidently in the interest of the Congress that it should be held in the City of Washington. Careful examination of the Meteorological Reports show that the first week of September is usually more cool and agreeable than later in that month. Experience has shown also, we believe, that large scientific meetings occurring in any city where a World's Fair is in operation lose much of their importance and success by being dwarfed in comparison with the great exhibition.

It seems to us of undoubted importance that the entire profession of the United States should cooperate in rendering this Congress as successful as possible. Our interest in the International Congress is, of course, genuine, but it is exclusively from a scientific standpoint. We confidently expect that when next the International Congress comes to this country it will achieve a success as brilliant as any it has yet attained; but the Pan-American Congress appeals to us not only from the scientific standpoint, but also because it holds out distinct prospects of the most important results following from closer relations of reciprocity between the various countries that will be represented in it. It is most desirable that closer relations shall be formed between the members of the medical profession throughout the entire American continent.

It is true that in the past a comparatively small number of students have come to our leading schools from the South American countries or from Canada. We believe this has been largely because the standard required in our schools and the facilities and equipment provided have not been such as to commend themselves in contrast with the schools of Europe and Great Britain. But, fortunately, just at this time it has been decided that a compulsory four years' course of medical study shall be required at a number of our leading schools, and important improvements also are being made in all the facilities for instruction. There can be little doubt that, if the Pan-American Medical Congress is made as great a success as it should be, all the great schools, from New York to Illinois, will derive valuable results in the form of steadily increasing numbers of desirable students from Canada and the South American countries.

THE CHARLATAN TURNS PHILANTHROPIST.

AN interesting but very old psychologic phenomenon consists in the desire of those suddenly obtaining undeserved power to be over-kind and unduly generous. The efforts of the *nouveaux riches* at alms-giving and public benefaction are generally comical and often farcical. It is the foible of the place-hunter elevated to unaccustomed office to endow his cronies with favors. When the subconsciousness of trickery and secret evil becomes so troublesome as to make the poor wretch incapable of sitting still on a chair, however ludicrous to others, there is no more natural method of settling accounts with the duped public than to graciously divide plunder with it. And while the poor democratic beast bellows, Hurrah! at the supposed generosity, the scamp laughs in his sleeve at his success in the triple scheme of extended advertising, popular applause, and conscience stifled by posing as a public benefactor.

It one day popped into the fancy of an erratic English magazine-writer and literary pyrotechnist that there was a chance to give his dear public "a new thrill," by the espousal of the cause of an Italian quack—one MATTEI—who, without any preliminary medical education or pathologic study, assured the world that he could cure carcinoma. MR. STEAD gave the "Count" the service of his dashing pen, and advertised him as splendidly as if all the other zodiacal constellations had been darkened in the heavens, leaving there only the single glory of Cancer. MR. STEAD now informs his readers that the Count offers to make over to charitable objects the net profits accruing from the sale of his "great remedies" in the English-speaking world. MR. STEAD *is to nominate the committee that will dispose of the money.*

From a Western religious paper we learn that, spurred by the very pertinent inquiry as to what he proposed to do for the gutter drunkard (who for good reasons could not pay him one hundred dollars for treatment), KEELEY answered with a proposition to buy the Washingtonian Home in Chicago (for the rehabilitation of drunkards) and carry on the institution according to his own methods.

Before accepting such propositions, the trustees

should read either FROUDE's instructive essay, *A Cagliostro of the Second Century*, the history of PERKINS's tractors, of "Actina," or of any one of a thousand similar "wonders and delusions of a day."

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 21, 1892.

DR. ALFRED L. LOOMIS, PRESIDENT, IN THE CHAIR.

THE CONTAGIOUSNESS OF TUBERCULOSIS: PROPHYLAXIS.

THE last stated meeting of the Academy of Medicine was devoted to a consideration of the contagiousness of tuberculosis, and of the methods that might be most reasonably urged and adopted by the medical profession with the object of limiting the spread of the disease.

DR. T. MITCHELL PRUDDEN opened the discussion with a paper on "The Elements of Contagion in Tuberculosis." He defined the word "contagion" as an "invasion and reproduction within the body of pathogenic microörganisms." It was not necessarily an invasion by *bacteria*, because other organisms may be the elements of contagion, as, for instance, in malaria. It was encouraging to note that the word "contagious" no longer refers to infinite possibilities in the unknown, for the contagium in an infectious disease is the particular pathogenic microörganism itself the advent of which in the body ushers in those reactions of the body-cells that we call the disease; and an infectious disease is *contagious* when, under the ordinary conditions of life, the contagium can be freed from the body of a diseased person, and be conveyed to the body of another in such a condition as to be able to reproduce the disease in this second individual. Hence the old distinction between contagion and infection has become impracticable and valueless, as it is now known that the communicability of an infectious disease is largely dependent upon the physical properties of the contagia, which determine the manner in which the contagia are spread from body to body, or from place to place. The common conception of a contagious disease is one that taints the atmosphere surrounding the patient, but this is now true of any of the ordinary diseases except the exanthemata. Thus, typhoid fever, diphtheria, and tuberculosis may be highly contagious, or slightly contagious, depending upon the care, or lack of care, taken in disposing of the exudates and discharges of the sick.

Dr. Prudden closed his paper with the remark that whatever public or private measures for the prevention of tuberculosis we decide are wise to adopt, they must be so conceived that education may go hand in hand with the law, and that for humanity's sake, those stricken with the disease must be made to know that the necessary measures of reform do not entail ostracism or isolation. We must, with much tact, and a large knowledge of the ways of the world outside of the laboratory, wisely and cautiously select the appropriate measures, not forgetting that death meanwhile holds carnival.

DR. EDWARD G. JANEWAY then discussed "The Necessity and Feasibility of Efforts to Prevent the Spread of Pulmonary Tuberculosis." He said that surgical literature, prior to the discovery of the tubercle-bacillus, shows that many intelligent observers had been forced to admit that the disease was at times spread from one person to another. To-day there are few that do not believe that the tubercle-bacillus is the cause of tuberculosis, and this belief necessarily brings with it a belief in the doctrine of the contagiousness of the disease. As an instance of the contagiousness of tuberculosis, he cited a case occurring in a family that had been free from such disease. A child, two months of age, was kissed by a visitor who was suffering at the time from pulmonary tuberculosis, with cavities in the lungs and bacilli in the sputum. The child became infected with tuberculosis of the mediastinal glands, pulmonary tuberculosis rapidly supervened, and death occurred two months later. Dr. Janeway thought that every physician could recall cases illustrating the contagious nature of the disease, yet few such cases were reported, partly, no doubt, on account of the attitude of mind of the observer, and partly from lack of time to investigate every detail bearing upon the etiology of the cases. He adduced statistics to show that the great majority of people having pulmonary tuberculosis were at an age when they were most apt to mingle with others, either while at work or at play. The statistics also showed the baneful influence of a concentration of population. Dr. Janeway looked forward with dread to the injurious effects that must follow, if the density of the population of New York City is allowed to increase at the present rate. If the medical profession only believes that the tubercle-bacilli *probably* bear a causal relation to tuberculosis, it still cannot afford to neglect measures that will destroy these germs, or prevent their dissemination. He therefore suggested (1) that each physician should lay down, for the management of individual cases, such rules as receive the sanction of those best informed on the subject; (2) that it should be the duty of every physician to report all cases of tuberculosis coming under his care to a central authority, which would then issue printed rules for the information of those attending these patients; and (3) that inspectors should be employed to inform and instruct the patients and their friends as to the manner in which the proposed measures were to be carried out. A combination of the first two indications was all that could be attempted at the present time. The rules referred to should call attention to the proper manner of disposing of the sputum and other discharges, the necessity of cleanliness of the mouth, and particularly in regard to the manner of expectorating, and the mode of protecting those parts of the bedding that are most likely to become soiled by the discharges. The rules should also point out the danger of healthy persons occupying the same room with the sick, the manner in which this room should be cared for when the patient is in the later stages of the disease, and how it should be purified after the patient has left it. Special attention should be directed to the manner of conducting health-resorts, so that healthy persons, and particularly persons convalescing from other diseases, should not be given rooms recently occupied by tuberculous patients. Proprietors of such resorts should be required to adopt adequate measures for disinfecting the rooms and the bedding, and to provide properly kept receptacles for the sputum.

In the absence of DR. JOHN S. BILLINGS, his paper on "The Prevalence of Consumption in the United States" was read by H. D. CHAPIN. By statistics it was shown that the annual death-rate from pulmonary tuberculosis for the census year ending June, 1890, was as follows in those States in which registration of deaths is the most complete: Connecticut, 2.34; District of Columbia, 3.59; Massachusetts, 2.67; New Jersey, 2.34; New York, 2.48; and Rhode Island, 2.66. From these figures it seems perfectly fair to assume that the number of deaths from pulmonary tuberculosis in the census year was over 125,000. For the six years ending May, 1890, the average annual death-rate from pulmonary tuberculosis was: In New York, 3.92; in Brooklyn, 2.98; in Boston, 3.86; and in Philadelphia 2.98; while in New York State, excluding New York City and Brooklyn, it was 1.81; and in Massachusetts, excluding Boston, it was 2.40. The influence of aggregation on the mortality from the disease is well marked. Estimating the average duration of pulmonary tuberculosis to be two years, he calculated that the number of cases of the disease actually existing at one time in New York City was 11,000; in Brooklyn, 4,000; and in the rest of the State, 13,000. Those localities that are especially frequented by the criminal and vicious classes are common centers of infection, and on this account the court-rooms are the most dangerous places, as they are crowded with this class of people, and the rooms are never effectually cleansed. Fortunately, however, these are just the places in which stringent prophylactic measures could be most authoritatively enforced. The medical profession should point out the necessity of providing in these places proper receptacles for sputum, and should direct that the rooms should not be swept while dry, but that the dirt should be gathered up with wet rags, and the floors cleansed with some disinfectant solution.

DR. ABRAHAM JACOBI said that as infants are usually infected with tuberculosis from external sources, it behooves the medical attendants to endeavor to secure a prompt cure of eczema, sore-throat, and catarrh, not only of the nasal passages and pharynx, but of the intestinal tract, and in this way minimize the chances of the tubercle-bacilli entering the system. Lesions of the bones, and particularly of the glands, should not be neglected, for a cervical adenitis is not infrequently the starting-point of a tuberculosis of the mediastinal glands. It should not be forgotten that one very likely source of infection in infants is the use of unboiled milk for their food.

DR. J. WEST ROOSEVELT thought the profession would accomplish much if it only succeeded in teaching the public the importance of simple cleanliness, and as an important step in this direction, the public should be instructed in the "art of spitting."

DR. A. H. SMITH thought that the public mind would best grasp the significance of the points brought out in this discussion, if it were made to understand that the two principal factors in the development of tuberculosis were the "seed" and the "soil;" and that although measures to limit the spread of the seed are important, they are no more important than efforts directed against the preparation of a favorable soil. The people should be made to understand that every habit of life that tends to depress the vitality is a factor in the formation of a suitable soil for the tubercle-bacilli. He had been impressed with the fact that in the rural districts where, at first glance, the surroundings seem most healthful, whole families would at times become victims of tuberculosis, and this susceptibility could only be explained by their conventional disregard of cleanliness and ventilation. Court-rooms may furnish a suitable place for the development of tuberculosis, but a still more fertile source is to be found in the post-offices in any large town. A post-office is one of the dirtiest places imaginable, and if, in addition to this, one or more of the large force of employés are victims of pulmonary tuberculosis, the mingling of their sputum with this dust exposes the other workmen to great danger of infection.

DR. C. G. CURRIER said that from a review of the literature of the past few years, he concluded that it is probable that heredity still plays a real and important part in the causation of pulmonary tuberculosis apart from predisposition. Although infants spend most of their time crawling about the floor, and are in this way especially exposed to inhalation of tuberculous dust, experience shows that tuberculous infection in infants most commonly starts in the glands, bones, or in the intestinal tract. Again, it is very rare for a husband to acquire the disease from a wife, or *vice versa*. Of 275 nurses that had been exposed to infection of tuberculosis, only two had acquired the disease in a period of twelve years.

DR. LAURENCE JOHNSON said that it had been proposed to put tuberculosis on the list of contagious diseases to be reported to the Board of Health. This would be unwise, for every physician knows what incalculable harm is likely to result to patients in the first stage of the disease from depriving them of that most important factor in therapeutics—hope. It has become firmly fixed in the minds of the masses, that pulmonary tuberculosis is a *hopeless* disease; while much has been done in recent years to shake this belief, but little effect has been produced except on the more intelligent classes.

DR. A. SEIBERT stated that he was much impressed by the case in which the infection had occurred from kissing, and expressed the hope that something would be done to break off this silly habit of kissing, which is so common among school-girls. It was perhaps significant that, in his experience, scarlet fever, diphtheria, and tuberculosis had developed much more frequently in girls than in boys.

THE PRESIDENT, in closing the discussion, said that it was the imperative duty of the Academy to instruct the public concerning the contagiousness of tuberculosis, and particularly in regard to the degree of contagiousness. Last summer a lady standing on the steps of Paul Smith's hotel was heard to say that she was glad she was so many miles away from the Adirondack Sanitarium, as she felt she was not so liable to develop tuberculosis. This remark shows that it is not enough to simply state the mere fact that the disease is contagious. Cleanliness is the keynote of the measures that had been advocated, and, in his opinion, it was the nasty American habit of expectoration that was largely responsible for the terrible ravages of the disease among us.

The Second International Congress of Dermatology will be held at Vienna from September 5 to 10, 1892, under the presidency of Kaposi.

CORRESPONDENCE.

CHICAGO.

The Illinois State Board of Health—Revocation of State Certificates—Railroad Transportation of the Dead—Typhoid Fever in Chicago, and its Relation to the World's Fair—Sanitary Work of the Police.

THE fifteenth annual meeting of the Illinois State Board of Health was held January 28th in the Capitol building at Springfield. Present: Dr. W. A. Haskell, of Alton, President; Dr. R. Ludlam, of Chicago; Dr. H. Williams, of Chicago; Dr. Griffith, of Springfield; Dr. W. F. Reilly, of Chicago, Secretary.

Among the matters of general interest upon which the Board took action was the revocation of State certificate No. 9490, issued January 30, 1890, to Dr. Samuel E. McCreary, then of Davenport, Iowa, subsequently of Peoria, Ill., and other places, and now advertising as having "permanently located" at Toledo. State certificate No. 8219, originally issued to Charles Rohning, M.D., of Brussels, Calhoun County, Ill., April 21, 1888, was also revoked on proof of Dr. Rohning's decease, and of the further fact that said certificate is in the fraudulent possession of Philip Simons, under indictment by the Grand Jury of Calhoun County for forgery and perjury, and who has been practising medicine under said State certificate.

The rules of the Board concerning transportation of the dead by railway or other public conveyance were revised so as to transfer corpses of those dead from diphtheria to the category of "absolutely forbidden." A number of cases where the transportation of diphtheria corpses had introduced the disease and caused fatal and widespread outbreaks, were reported by the Secretary as the cause for the act.

The following resolution by Dr. Haskell was unanimously adopted:

Resolved, That the position of special sanitary counsel to the Illinois State Board of Health be tendered to Dr. John H. Rauch, of Chicago, and that upon his acceptance of the position he be requested to make an investigation of the recent charge that Chicago is suffering from an epidemic of typhoid (enteric) fever due to a polluted water-supply; and, in view of the widespread publicity of said charges and their probably damaging influence upon the World's Columbian Exposition, the utmost expedition consistent with thorough investigation is urged.

The charge referred to in the above resolution was made by Professor William T. Sedgwick and Mr. Allen Hazen in a paper recently read before the Massachusetts Institute of Technology in Boston, from which we clip the following extracts:

"In the city of Chicago there has been for many years a large amount of typhoid fever. It was abundant, for example, in 1872, 1881, 1885, and in 1886. Between 1886 and 1890, however, it was less common; but in 1890 the death-rate from typhoid fever suddenly rose to a height almost exactly the same as that reached by Philadelphia in 1876, namely, 9.16 deaths per 10,000 of inhabitants and 4.16 per cent. of all deaths that occurred in that year. The actual number of deaths in Chicago in 1890 from typhoid fever was 1008. During the year just ended Chicago has reported 1977 deaths from typhoid fever, giving the prodigious death-rate for this disease of 16.64 per 10,000 of population and a percentage of all deaths of 7.19.

"In the month of May alone there were 408 deaths from typhoid fever. This number is more than one-fourth as great as the entire number of deaths from this disease the year before in the whole State of New York, containing 6,000,000 inhabitants. In the single month of May, 1891, there were more deaths from this disease in the city of Chicago than in the city of New York during the whole twelve months of 1888, 1889, 1890, or 1891. In 1891 there were 385 more deaths from typhoid fever in Chicago than in the previous year in the whole State of New York, with five times the population, and nearly 1400 more deaths than in London with three and one-half times the population of Chicago.

"The whole number of deaths from typhoid fever in Chicago in 1891 was 1997. Multiplying this number by ten, we have an approximate estimate of the whole number of persons affected by this disease. These extraordinary figures can scarcely be surpassed or even maintained in 1892 or 1893, but they must be a source of constant anxiety to the citizens, as they certainly are a menace to the sanitary success of the World's Fair.

"We copy from the official report of the Department of Health of the city of Chicago that typhoid fever was exceedingly prevalent in Chicago in 1872. We cannot agree with the author of the statement in the annual report of 1872 that, although the overcrowding and barrack-life incident to the months following the great fire in October, 1871, 'brought its legitimate result in an increased death-rate, yet during the year no epidemic existed.' The death-rate from this disease and its percentage of mortality to the total mortality were greater than have ever been since that time until the present epidemic had developed. After 1872 there was a marked improvement until 1879, when there was a slight increase, followed by a great increase in 1881. The fever subsided until 1885, when there was another marked increase, followed by a decrease in 1886, 1887, and 1888.

"In 1889 a rise began which attained the proportion of an epidemic in 1890, and reached the great height already referred to in 1891. It will be noticed that the epidemic in 1872 fell off very rapidly in 1873. That of 1881 declined much more slowly; that of 1885 more slowly still, so that unless some special effort is made to hasten the decline of the present epidemic, there is reason to fear that typhoid fever may continue to be very prevalent in Chicago in 1892–93.

"In the next place we may inquire whether, on the whole, typhoid fever has been increasing or decreasing in Chicago. An examination will show that for the eleven years, 1881–91, it has been much higher than for the preceding eleven years, and even omitting 1891, typhoid fever has, on the whole, gained ground in Chicago since 1880. This is true even if both 1890 and 1891 are omitted.

"The conclusion is inevitable that typhoid fever has, on the whole, materially increased in Chicago since 1880; while within the last two years it has risen to an extraordinary height. We may next inquire how Chicago

compares with other cities in respect to mortality from typhoid fever.

"The death-rate from typhoid fever of all the cities of Massachusetts, twenty-eight in number, for the twelve years 1878–89, was 4.62; that of Chicago during the same period was 5.85; that of Boston, 4.32; Worcester, Cambridge, and Lynn, 3.91. The averages for the whole State of New York, for the six years 1885–90, is 1.38. The average percentage for the city of Chicago during the same period was 3.27.

"From these facts it appears that typhoid fever has long been excessively prevalent in Chicago, and we have already shown that it is, on the whole, increasing, while within the last two years it has risen to extraordinary proportions.

"In a paper of this character we do not properly consider the causes of these facts. Nor would it be proper to attempt to analyze causes, but since it is now held by sanitary experts that the water-supply is the chief means of spreading typhoid fever, we may be permitted to look into the drainage and water-supply of Chicago. In the Board of Health reports of 1883–4, Commissioner of Health De Wolf, says: 'There can be no question but that the stream of filth coming through the city is a constant menace to the health of the citizens.'"

In view of all these facts the authors urge that active measures be taken to improve the sanitary condition of Chicago before the opening of the World's Fair.

At the afternoon session of the Board the following officers were elected for the ensuing year: Dr. W. A. Haskell, *President;* Dr. F. W. Reilly, *Secretary;* Dr. A. L. Clark, *Treasurer;* Drs. W. R. McKenzie and D. H. Williams, *Auditing Committee.*

Our City Health Commissioner, Dr. Ware, has publicly testified to the general worthlessness of the city's sanitary officers and incidentally commended the work of policemen as special sanitary officers.

Dr. Ware's testimony proves the importance of what the daily press has frequently urged, viz., that patrolmen on regular beats should be *ex-officio* sanitary officers. Especially in the residence districts should the police be charged with a general supervision of the thoroughness of cleaning alleys and streets. Such labor and the reporting of delinquents to headquarters would not be an irksome addition to a patrolman's duties and many would hail it as a relief from idleness.

A single policeman's badge of authority is often worth more than a dozen special "inspectors." The police force has habitually looked the other way, even in cases of flagrant violations of health ordinances, since public sanitation was intrusted to "inspectors."

It would be better to change the system entirely and give the police *carte-blanche* to enforce alley-cleaning regulations. The work would then be effectively done.

A FORM OF FELT JACKET.

To the Editor of THE MEDICAL NEWS,

SIR: The article in your issue of January 16, 1892, entitled, "Injury to the Spine: Invention and Application of a Paper Jacket," has prompted me to bring to your notice a form of jacket that I have been using for some time. In every instance I find it preferable to the plaster jacket, as it combines elasticity, firmness, and light weight.

I have had occasion to use plaster a great deal, and I believe that practice has enabled me to produce as light and rigid a jacket as it is possible to make, but I was led to search for something that was suitable alike to the infant and adult. This I found perfectly supplied in the adaptable porous felt, such as is ordinarily used for splints. The method of application is simple, and eminently satisfactory. An accurate mould of the body is taken by means of the plaster-of-Paris jacket, the patient being suspended. Before the plaster is entirely set, the cast is cut open in front. In this mould, a cast of the body is taken and allowed to harden. A piece of felt of suitable size is dipped in very hot water for a moment and quickly applied to the cast, and after having been gently beaten and pressed so as to conform to every line of the cast, is firmly held in place with muslin rollers and allowed to harden. This usually occurs within forty-eight hours. In this manner an exact mould is reproduced, showing every bony and muscular prominence. After trimming to fit, the spaces about the arms and hips being cut out, eyelets and laces are provided, and the jacket applied to the person during suspension.

The weight of the jacket is almost *nil.* It is firm and elastic. It is soft and porous, and fulfils every requirement of a spinal support.

To this cast may be added any form of apparatus that may be desired to give further spinal support or suspension. It may be readily reinforced by light steel strips, riveted to the sides. It may also be perforated, to give further lightness and ventilation.

While I do not claim any originality in introducing this form of jacket, I have not seen it used by anyone previous to the time that I first used it. Indeed, I have not seen this form of cast made use of by anyone, but was driven to search for something more suitable than plaster for infants and very young subjects who could not bear the weight of plaster, and in experimenting with various substances found this one to fulfil every requirement. As there is no special skill nor any particular tools required, the physician can at once see the advantages that this material possesses over any that is now in use.

I am confident that it is superior to any other material now in use, as it will stand any amount of rough usage; will not chip, break, or be bent out of shape.

The entire process is so simple, so readily performed, and gives such an inexpensive and satisfactory jacket, that I deem it worthy of your readers' attention.

CHARLES H. MERZ, M.D.

SANDUSKY, O., January 18, 1892.

NEWS ITEMS.

The Pan-American Medical Congress in the United States of Colombia.—Pursuant to nominations by Dr. Pedro M. Ibañez, of Bogota, member of the International Executive Committee for the United States of Colombia, the following organization of the Pan-American Medical Congress has been effected in that country: Vice-President, Dr. Pio Rengifo, New York. Secretaries of Sections—General Medicine, Dr. Ignacio Gutierrez Ponce,

Paris; General Surgery, Dr. Rafael Rocha Castilla, Bogota; Military Medicine and Surgery, Dr. Abraham Aparicio, Bogota; Obstetrics, Dr. Joaquin Maldonado, Bogota; Gynecology and Abdominal Surgery, Dr. Jose M. Buendia, Bogota; Therapeutics, Dr. Manuel Plata Azuero, Guaduas; Anatomy, Dr. Juan D. Herrara, Bogota; Physiology, Dr. Antonio Bargas Vega, Bogota; Pathology, Dr. Nicolas Osorio, Bogota; Diseases of Children, Dr. Antonio Gomez Calvo, Bogota; Ophthalmology, Dr. Proto Gomez, Bogota; Laryngology and Rhinology, Dr. Luis Fonnegra, Bogota; Otology, Dr. Carlos Esguerra, Bogota; Dermatology, Dr. Daniel E. Coronado, Bogota; Orthopedics, Dr. Juan E. Manrigue, Bogota; Naval Hygiene and Quarantine, Gabriel I. Castaneda, Bogota; General Hygiene and Demography, ———; Mental and Nervous Diseases, Dr. Pablo Garcia Medina, Bogota; Oral and Dental Surgery, Dr. Guillermo Vargas Paredes, Bogota; Medical Pedagogics, Dr. Jorge Vargas, Bogota; Medical Jurisprudence, Dr. Leoncio Barreta, Bogota; Auxiliary Committee (each member being the official representative of the Congress in his respective city), Dr. Nicolas Osorio, Dr. Andres Posada Arango, Dr. Jorge E. Delgado, Dr. Eugenio de la Hoz, Dr. Domingo Cagiao, Dr. Jose Manuel Rodrigues, Dr. Paulo Emilio Villar, Dr. Felix M. Hernandez, Dr. Rafael Calvo, Dr. N. Ribon, Dr. Nilceades Castro, Dr. Cayetano Lombana, Dr. Jose M. Martinez, Dr. Isaias Saavedra, Dr. Severo Forres, Dr. N. Villa, Dr. Evaristo Garcia, Dr. Miguel Caicedo, Dr. Emilio Villamizar.

The following medical societies have been elected as auxiliaries of the Congress, viz., Academia Nacional de Medicina, Academia de Medicina de Medellín, Sociedad de Medicina del Cauca.

The following medical journals have been designated as official organs of the Congress, viz., *Revista Médica*, Bogota; *Revista de Higiene*, Bogota; *El Agricutor*, Bogota; *Boletin de Medicina del Cauca*, Calá; *Anales de la Academia de Medicina de Medellín*, Medellín.

Medical Education in Turkey.—There are five medical schools in the Turkish Empire—one at Constantinople, one at Cairo, one at Aintab in Northern Syria, and two at Beyrout, one of the latter being Protestant and the other Roman Catholic. Only the Constantinople and Cairo institutions possess the right of granting licenses to practise; the other three, which are in the hands of missionaries, can only give certificates of study, candidates having to go to Constantinople to be examined. A diploma conferred by the Cairo school gives only the right to practise in Egypt; if a physician who has obtained a diploma at Cairo wishes to practise in other parts of the Turkish Empire, he must pass a further examination at Constantinople. The medical school of Constantinople was founded in 1883, and until now has educated some 1400 practitioners. The teaching staff comprises twenty professors, and the curriculum is of six years. The Protestant medical school of Beyrout has been in existence about twenty-two years, during which time it has educated 105 practitioners. There are six professors, and the length of the curriculum is four years. The other two schools are organized on a similar basis.

Professor A. Richet, a distinguished French surgeon, died recently in his seventy-sixth year.

Obituary.—Dr. Harmon W. Shove, of Woodbury, Conn., died of pneumonia, on January 23d, at the age of sixty-nine years. He was one of the most prominent practitioners in the section in which he lived. Dr. Shove was graduated from the Yale Medical College in 1853, and at once entered upon the practice of his profession at Woodbury. By his studious habits and almost unlimited capacity for work, he was, after nearly forty years of active service, still in the full and successful practice of his profession, which, by his unblemished life and dignity of character he helped to advance and elevate.

The Prevention of Adulteration in Russia.—A municipal institute for the analysis of food and drink has been opened at St. Petersburg. Rough qualitative analyses of milk, butter, bread, wine, beer, etc., will be made gratuitously for the public; but for more elaborate examinations of these substances, and of water, flesh suspected of trichinosis, preserved meats, etc., the payment of fees will be required.

The Correction of Prostitution.—An association has recently been founded at Budapest with the objects of combating the evils of prostitution, of redeeming its victims, and of establishing and maintaining a free dispensary for the treatment of poor patients suffering from venereal disease.

Matthew Berkeley-Hill, the distinguished English genito-urinary surgeon and syphilographer, died recently, in the fifty-eighth year of age. He was Hunterian Professor of Surgery and Pathology in University College and Dean of the Medical Faculty.

Ribbert, of Bonn, has accepted election to the chair of Pathological Anatomy in the University of Zurich, succeeding Klebs, who has resigned.

Albert James Bernays, lecturer on chemistry and toxicology at St. Thomas's Hospital, died recently, sixty-nine years old. The remains were cremated.

BOOKS AND PAMPHLETS RECEIVED.

The Transactions of the Association of Military Surgeons of the National Guard of the United States for the Year 1891. Chicago and Milwaukee: Burdick, Armitage & Allen, 1891.

Criminology. By Arthur MacDonald. Reprint, 1892.

Concealed Pregnancy. By Albert Vander Veer, M.D. Reprint, 1891.

Tubercular Peritonitis. By A. Vander Veer, M.D. Reprint, 1891.

Report of a Case of Hematophilia. By A. Vander Veer, M.D. Reprint, 1891.

Retro-peritoneal Tumors, etc. By Albert Vander Veer, M.D. Reprint, 1892.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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THE MEDICAL NEWS. 169

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ORIGINAL ARTICLES.

THE INFLUENCE OF HEREDITY IN THE PREVENTION OF DISEASE.

BY WOODS HUTCHINSON, M.D.,

PROFESSOR OF ANATOMY IN THE IOWA STATE UNIVERSITY, DES MOINES, IOWA

I HAVE ventured to call attention to this most important, but most difficult and indefinite subject, not with the hope of making any original additions to our knowledge of it, but simply to question how we are to interpret some of the facts already known and to provoke a general discussion of the subject in the light of wider and riper experience. We so often hear and read of the influence of heredity in the production and propagation of disease, and the subject in its concrete form is so frequently thrust upon us in our professional experience, that we are, I think, in no small danger of neglecting and almost forgetting the other and larger form of its action, and of regarding it as an almost malevolent rather than as a grandly beneficent influence. It is too often true, from the pathologist's as well as from the historian's point of view, that "the evil that men do lives after them, the good is oft interred with their bones." A few painful instances of inherited taint or predisposition are allowed to subtend a larger angle in our mind's eye than a silent host of cases of equally truly inherited immunity, or vigor that defies attack. Our most deeply rooted and fundamental characteristics have come down to us through a long, illustrious line of mammalian and pre-mammalian descent, by a rigorous selection and perpetuation of the useful and healthful results of heredity, and are not to be smothered or perverted by the upstart legacies of an odd generation or two of morbid action. The pedigree of the most aristocratic of diseases is but of mushroom length. The inheritance of abnormality of structure is rigidly self-limited, partly by the disadvantages at which it places its possessors and partly by the strong tendency of the system to revert to earlier and more vigorous and serviceable types. This tendency of our oldest ancestral traits to assert their supremacy we term the *vis medicatrix naturæ*—that sleeping lion to rouse which into action all our drugs and remedies are but as feeble stings and javelins. Heredity is not only vigorously limited in its influence for evil, but is the very basis of all remedial action. And, when we come to examine it closely, its evil influence is almost purely of a negative character—an absence of vigor, not the presence of a virus. Inherited deficiency suffers and cries out loudly for relief. Inherited vigor can take care of itself, and is silent with the great, calm silence of Nature. Are we not in danger of allowing our view of the question to be unconsciously influenced by this state of affairs even to the extent of regarding and speaking of disease as an independent entity with boundless powers of self-propagation and extension? We gloomily talk about disease being on the increase. We vehemently urge our legislators to prevent the marriage of consumptives, to restrain inebriates from propagating their kind, to forbid the bans of all whose pedigree shows the taint of insanity, as if the whole race were threatened with physical degeneracy, unless something be done to take the case out of the incompetent hands of Nature. We write of the consumptive, the neurasthenic, the epileptic, as a much-to-be-dreaded source of lasting danger to the community and to future generations, instead of as one whom Nature has branded with her verdict, "Weighed and found wanting" and marked for destruction. We seem almost to forget that even when the unfortunate sufferer escapes an immediate or directly fatal termination and succeeds in maintaining an existence for two-thirds or three-fourths of the natural term, of all his vital functions the reproductive suffers first and most severely, as is shown in the well-known infertility of wild animals in captivity, the suppression of menstruation in consumptive females, and the deadly abortifacient effect upon both sperm and germ of the syphilitic virus. When the vigor of the organism is sufficient to resist the tendency and to accomplish reproduction, a certain proportion of the offspring will revert to the healthier, sturdier type of their ancestors, while the major part of the remainder will be so handicapped by the lack of that vigor and resisting-power which their enfeebled progenitor could not impart to them, as either to perish during infancy or to break down under the strain of that grand rallying of all the vital forces for the act of procreation which marks the period of adolescence. Is not inherited syphilis, with its enormously increased mortality from the third month of fetal existence on, an example of the former method of elimination, and the tuberculous tendency, with its harvest-time just before or early in the reproductive

period, of the latter method? I think we are prone to underestimate the perfection of this check in the case of specific disease. The vast majority of ova impregnated during the period of active syphilization in either parent are destroyed before parturition, while of children produced, the few who, scarred and shattered, survive infancy seem every year to present a rapidly decreasing line toward extinction; in fact, in my own limited personal and hospital experience of some three hundred cases of hereditary syphilis, I do not believe that I have ever met with a case that had passed the age of thirty-five which presented the characteristic facial, ocular, and dental changes. Broadly speaking, all disease is self-limited, either in the individual or in the family.

In order to arrive at some practical estimate of the actual connection between heredity and disease as we find it already existing, I have endeavored to collect some statistics bearing upon the history in respect of the three great maladies to which the term "hereditary" is generally though somewhat loosely applied, and by which the welfare of posterity is supposed to be most seriously threatened, viz., insanity, tuberculosis, and carcinoma.

In regard to the first of these, it need hardly be said that it is an open question if we have any right or reason for regarding it as a disease or distinct pathologic entity in any strict sense of the term, any more than lameness, blindness, or general debility; yet as it is generally most vehemently denounced as such and declared to be the one dark shadow on the future of our civilization, I shall make no further apology for so treating it. Through the kindness of my friend, Dr. G. W. Hill, of the State Asylum at Independence, I have succeeded in obtaining reports of some fifty public institutions for the care of the insane in all parts of the United States, with an aggregate of over 54,000 inmates. Of this number, 5093 cases, or barely 9.4 per cent., are recorded as "hereditary," or in other words as having had one or more insane relations. Of course, this figure can only be taken as a very rough estimate of the condition of affairs, on account of the difficulty of obtaining accurate or reliable histories of the cases previously to their entering the asylum; indeed, some superintendents refuse to classify their cases according to cause, while a few even omit heredity entirely from their list of causes. Although in some cases, for instance, in comparatively recent immigrants, almost no family history can be elicited, while in others the patient's relations will from family pride even endeavor to conceal the existence of other "skeletons in the cupboard" among their mutual kindred, yet in many instances no such motive exists, the family being ready to tell all that they know and even more for the sake of getting someone to take charge of the unruly sufferer. On the other hand, the existence of a lunatic or "queer body" in any family is a decidedly macroscopic symptom to the eye of the dullest observer. Like murder, insanity "will out;" and when we consider that many of these cases have been duly and elaborately examined and passed upon by a public commissision that could call as many witnesses as it might desire, I think we may fairly claim that this record represents at least the major proportion of all cases in which such a coincidence existed. Even supposing that mental unsoundness in the family was discovered in only half the cases in which it actually existed, we should still be distinctly below the 22.6 per cent. which represents the proportion of cases in which heredity is recorded as a factor in the total aggregate of the English and Welsh asylums. This fact, together with the strikingly excessive proportion of patients of foreign birth in our institutions, would seem to me to go far to prove that the much-lamented increase of insanity in this age and country is in no sense attributable either to heredity or to the cumulative effect of civilization upon successive generations, but is principally due simply to the sudden and excessive changes of physical, social, and political environment to which our immigrant, and to a lesser degree our native, population has been subjected. Statistics upon this subject are scarce and difficult to obtain, and what few I have been able to collect seem rather to shake one's confidence in the popular belief that "figures won't lie" than to give any reliable and consistent information, the reports before mentioned varying from as low as 0.6 per cent. to 35 per cent. of hereditary influence. Maudsley found hereditary predisposition in 16 of 50 cases; Trelat in 43 of 73; a report to the French government in 1861 gives 530 of 2000 cases; Jacobi reports 24 of 220; Hagen discovered "direct hereditary predisposition" in 26 of 187 cases, and Mitchell in 20 of 64—a total of 659 in 2594, or a trifle over 25 per cent., apparently attributable to hereditary influence. Estimates are somewhat more numerous, but vary almost as widely: Burrows regards hereditary predisposition as the cause of six-sevenths of all cases; Moreau, of Tours, of nine-tenths; Martini of nearly one-third; Esquirol of one-fourth in the poor, of three-fifths in the rich; Bergmann of one-third; Emmert of 75 per cent.; Maudsley of "more than a fourth but less than a half;" Marcé of nine-tenths; Leidesdorf of 25 per cent.; Hill of one-fourth—making an average estimate of 52 per cent. of hereditary influence.

With all due respect to the authorities quoted, I am afraid one can hardly help being struck with the fact that the majority of the "estimates" begin almost where the "figures" leave off, and continue

onward and upward to perilously near the pinnacle of 100 per cent., and that data showing 25 per cent. are hardly a sufficiently solid basis for computations reaching over 50 per cent., even though quoted as such. Would it not seem highly probable, upon even this meager showing, that our generally accepted conception of the mischievous influence of heredity in this important field is in need of serious revision? The wider the range of investigation is made and the more completely local or personal sources of error are eliminated, the smaller becomes the apparent importance of heredity as a factor, while the common estimate of over 50 per cent. of malevolent influence seems to be supported by data to the extent of barely 10 per cent.

Of course, it goes without saying that these figures by no means represent the total number of cases in which suspicious or morbid family history existed, for there must have been many others in which, from various causes, it was impossible to elicit it; but, on the other hand, it must be remembered that the terms "hereditary predisposition" and "family influence" are very loosely used and in many cases really mean nothing more than that one or more of the patient's numerous relatives or ancestors has been insane, or even epileptic or inebriate, a fact which may have no connection whatever with the case in question, excepting an historic one. If every family in which a case of mental aberration can be ferreted out is to be regarded as predisposed, how many of us will escape suspicion? The mere fact that one of the patient's relations or even ancestors has been insane is no more necessarily the cause of his insanity than would the fact of his grandfather having been lost at sea be the cause of his meeting death by drowning. *Post hoc* is by no means always *propter hoc*, although I think that we are often apt to regard it so in hereditary pathology.

When we come to consider carcinoma, the second great morbid process in which heredity is declared to be a factor, its apparent influence shrinks to still narrower limits. Hardly any two estimates agree, not even those given at different times by the same authority, but their range of variation is much less striking than in the case of insanity. Definite data of any kind seem even scarcer and more difficult of discovery, a tolerably extensive review of the literature of the subject in the Library of the Surgeon-General resulting only in the mere handful which I have to present. S. W. Gross finds hereditary influence in 10.3 per cent. of his cases; Lebert traces it in 10 of 102; Paget traced the disease to other members of the family in 78 of 322 cases, and in another series of 160 cases found hereditary tendency in 26; Sibley finds 34 instances of heredity in a collection of 305; West, 8 of 49 cases of uterine carcinoma, and Von Winiwarter 5.8 per cent. in his list of cases of mammary carcinoma; Velpeau finds an inherited predisposition in one-third of his cases, while Parker found such family history in only 56 of 397 cases. I have succeeded in getting a report of only one of the hospitals devoted specially to the treatment of this disease, the Brompton Cancer Hospital of London, which gives the proportion of cases having relations who are affected with carcinoma as 10.3 per cent. in their grand total of 28,638 patients in thirty-seven years.

A highly suggestive bit of collateral evidence in the same direction is the fact given by Brannan in his most interesting analysis of 2000 consecutive deaths in the experience of the Washington Life Insurance Company, that of the 56 cases having carcinoma in their family history (41 of whom had lost a parent by this disease), only one, or 1.79 per cent., died of carcinoma, while of the remaining 1944 having no such history, 67, or 3.45 per cent., fell victims to it. This unexpected preponderance of mortality, of course, is probably accidental and due to the small number of predisposed cases; but it certainly would not have been thus were heredity a really appreciable and active factor in the disease.

The evidence is scanty, but tolerably harmonious so far as it goes, and I think it would be safe to say that the tendency of the best thought of modern authorities on this subject is decidedly in the direction of seriously doubting whether heredity plays any appreciable part as a factor in the production of carcinoma. Indeed, one can hardly help wondering how such a widespread belief in the importance of hereditary influence in carcinoma came to be built up on such an apparently slender basis, especially when we remember that the figures given probably represent nearly the full proportion of cases in which a suspicious history actually existed. Here there is comparatively little tendency to concealment or falsification, on the part either of the patient or of her relatives; on the contrary, we will be told at the outset of our inquiries, with what seems almost like a morbid pride, that "there is cancer in the family." Indeed, I am half inclined to believe that we have unconsciously imbibed the major part of our belief on this subject from the laity. Merely upon *à priori* grounds one would hardly expect the organism or any part of it to be born old, and yet senility of tissue from extinction of function would seem unquestionably by far the most potent, if not the only proved predisposing cause of the carcinomatous process. The uterus undergoing involution, the atrophying mamma, the puckered lip wrinkling over the toothless gum, have all either temporarily or permanently outlived their usefulness, become supernumeraries,

pensioners on the body at large, and these are the breeding-grounds of 70 per cent. of all cases of carcinoma.

When we attempt to approach the "white plague of the North" from this standpoint, the problem becomes a well-nigh hopelessly speculative one, on account of the vastness of the field and the utter inadequacy of definite information obtainable. Estimates are legion, but figures are few, and so nearly equally distributed, from 10 per cent. to 70 per cent. in single series, as to fail to inspire much confidence in their reliability. I have written to the medical directors of some four or five of our leading life insurance companies, asking for references to data bearing upon the question. Their replies have been most prompt and courteous, but all practically to the same effect: collections of cases are so few and on so microscopic a scale that, as one of them frankly says, "We have almost ceased to regard statistics as of practical value in the selection of life risks." Text-books and monographs on pulmonary tuberculosis usually carefully avoid statistical statements, and when the rule is relaxed it is principally to ring the changes on the fossil figures of Louis, Lebert, Barthez, *et al.* My researches have been far from exhaustive, but the results have been most disproportionately and distressingly meager. And yet, so far as they go, and biased as many of them evidently are, they fall far short of supporting the commonly accepted view of the question. There is probably no disease that both the profession and the laity are more confidently and unanimously agreed in ascribing largely to hereditary influence than "consumption." Our poor starveling, flat-chested patient assures us that she knows there can't be anything "wrong with her lungs," because "there is no consumption in the family." Of six intelligent and experienced practitioners, taken at random, approached on this subject, four gave it as their opinion that from 70 per cent. to 90 per cent. of all of their cases were traceable chiefly to heredity, while the other two placed the proportion at 40 per cent. But before giving the actual figures obtained, it may perhaps be as well to briefly consider their probable value on general principles. In the first place, they are likely to be fairly exhaustive and complete as far as they go. The patients are usually under observation for considerable periods of time; are not only not in any way incapacitated by their condition for either remembering or relating the facts of their history, but are above the average in intelligence and conscientiousness. "The good die young," usually of pulmonary tuberculosis, and it is almost a question whether we are not entitled to regard conscientiousness as one of the leading morbid symptoms, so well-nigh invariably is it found in conjunction with pulmonary tuberculosis. There is but little motive for concealment, so that the percentages probably represent almost the total of those having such flaws in their family history in each group investigated. On the other hand, in no group of morbid histories is it more imperative ever to keep in mind that *post hoc* is by no manner of means *propter hoc*. A very brief mathematical statement of the case will illustrate this at once. According to our mortality-rates one-seventh of our population ultimately dies of pulmonary tuberculosis, *ergo* any individual who could recall the histories of seven deceased ancestors or relatives would have the right, if we may use the expression, by the law of averages, to one ancestor dead of pulmonary tuberculosis, without being under any peculiar suspicion of "consumptive taint." The smallest possible family group must consist of six members, two parents and four grandparents, but when the investigation is extended, as it frequently is, to brothers and sisters, uncles and aunts, it may include from ten to thirty members, among whom it would be strange if one or more had not fallen victims to this commonest cause of death. What wonder, then, if the enthusiast upon heredity—and most of those who prepare tables are enthusiasts—is able by perfectly legitimate means to make a most imposing display of facts that apparently support his theories to the letter. But what most seriously impairs the scientific value of these tables is the fact that in a considerable minority, if not in a majority of them, the fundamental term itself denotes not merely a morbid process, but the degree of that process—in other words, that "consumption" means not merely "tuberculous degeneration," but tuberculous degeneration sufficiently extensive to seriously threaten life, or even in the usage of some authorities "tuberculous degeneration ending in death." It is by no means uncommon to hear or read such expressions as: "Mr. A. was threatened with consumption in his early days," or "Mr. B. had all the symptoms of phthisis at one time," "*but he recovered.*" I think we are inclined to markedly underestimate the prevalence, and if I might use the expression, the naturalness of this simple reversion to the ameboid state on the part of certain of our tissue-cells. Now that Von Ruck, Trudeau, and other modern therapeutists, are assuring us that from 60 per cent. to 80 per cent. of cases of pulmonary tuberculosis in the earlier stages are curable, and that pathologists are informing us that over 30 per cent. of bodies dead of diseases other than tuberculosis have fibrous or calcareous deposits, evidently of tuberculous origin, in the lungs, the prevalence of even that aggravated stage of the process which is termed consumption would appear to be much greater than is usually believed. A mortality of 40 per cent.—a maximum one—would give it a morbidity of nearly 35 per cent.—indeed some authorities

claim 50 per cent. of the race as suffering from it at some time in their lives. When the process appears where we might expect it—in those areas in which cell-proliferation is most active and the tissues most nearly in their embryonic or ancestral condition, the corpuscle-breeding areas of the lymphatic glands—we dub it "struma," and place it in a separate column; when it originates in the next most active cell producing areas—the great serous membranes—we call it meningitis, peritonitis, or pleurisy, as the case may be; in the cells of the bone-marrow "osteitis," but taking all these altogether as mere modifications of the same process, it really seems that it would be well-nigh as logical to speak of "hereditary" gastritis, eczema, or coryza, as of hereditary tuberculosis. So enormous is the extent of its prevalence that it seems almost entitled to rank as one of the primary fundamental reactions of living tissue—the starvation reflex.

Of the data attainable, the oldest are those of Louis, Gialussi, Rilliet, Barthez, and Lebert, who report respectively 11 per cent., 10 per cent., 14 per cent., and 16 per cent. of all their cases (actual number not given) as presenting this factor. Piorny, Ancell, Pidoux, and Walshe go a little higher, and find heredity present in 25 per cent. of all their cases. The average keeps rising. Hérard and Cornil give 38 per cent., Briquet 40 per cent., Miller, Cotton, and Bodendahler 50 per cent., Homan 70 per cent., Portal 75 per cent., while Rufz caps the climax with 83 per cent.

The tables in which the actual numbers are given do not vary over quite so wide a range, but there is still plenty of the "spice of life" in them. Koranyi, in 900 cases, finds heredity in 20 per cent.; Leudet, in 500 cases, in 50 per cent.; Carl von Ruck, 35.4 per cent. in 301 cases; Herman Brehmer 36 per cent. in 13,000 cases (Görbersdorf Institute); Detweiler, of Falkenstein, 35 per cent. in over 6000 cases; Brannan, 23 per cent. in 350 cases; Smith, 70 per cent. in 1000 cases. In round numbers this makes a total of 22,000 cases, with an average percentage of 37 per cent. This is a very considerable proportion, yet when we contrast it with the result arrived at by Brannan—that, of 2000 risks accepted by the Washington Life Insurance Company, at an average age of thirty-five years, 22.4 per cent. had hereditary tendency to consumption (a percentage which would certainly be greatly increased if the rejected risks, earlier ages, and both sexes were included), it seems to me far from conclusive, and certainly fails to support the usually accepted views on the question. There is, of course, no doubt that the existence of a severe or fatal degree of tuberculosis in a parent distinctly increases the probability of such a process appearing in the offspring. In Brannan's table, 27 per cent. of those showing "hereditary tendency" died of tuberculosis, as against 16 per cent. of those showing no such tendency. But it would seem more probable that what the offspring inherit is merely the lowered vitality of which tuberculosis is a symptom, rather than any specific tendency to this special form of degeneration. The "consumptive" is physiologically below par, from his undersized heart and dilated stomach to his clubbed finger-tips.

Defective nutrition is a more powerful factor than heredity, as shown by Brannan's tables, for, of the 690 cases, with no hereditary tendency whatever, that were below the standard weight, 30.7 per cent. died of tuberculosis, as against 27 per cent. of 252 cases of all weights having such hereditary tendency; while, more significant still, of those having such tendency who were above the standard weight, only 6 per cent. died of tuberculosis, as against no less than 48 per cent. of those of this group who were below standard weight. In other words, a mere increase of fifteen pounds in weight seems capable of annulling the strongest hereditary tendency, for the 6 per cent. mortality of the heavy-weights among the predisposed is within a fraction of the percentage in the same class of the non-predisposed.

To sum up roughly, we find a tainted pedigree—

Among 57,000 cases of	insanity,	in 10.1	per cent.
" 30,000 "	carcinoma,	" 10.5	"
" 22,000 "	tuberculosis,	" 37.3	"

These estimates are, of course, made on far too narrow a basis to be regarded as in any way conclusive, and their reliability for positive purposes is open to serious question in many particulars, but I think they at least justify us in demanding, in answer to the charge that heredity is, in any sense, a prominent or active factor in the production of disease, the Scotch verdict of "Not proven."

On the other hand, all the remedial power of Nature, individual and racial, all the vigor that defies attack, all the priceless immunity from disease, all the exquisite harmony with environment that surrounds us on every hand, are the direct results and illustrations of the law of heredity. Its beneficent effects are innumerable and unquestionable; its injurious effects few and doubtful.

Rheumatoid Arthritis. — BLAKE (*Provincial Medical Journal*, 1892, xi, 121, p. 11) expresses the view that a proportion of cases of rheumatoid arthritis are dependent upon some form of intoxication, in consequence of which the nervous system suffers secondarily. He therefore recommends that in a given case a careful search should be made for a source of poisoning from within or without. This found and removed, the circulation is to be supported, mental strain relieved, and nutrition maintained. Passive motion and massage, conjoined with electricity, should be energetically employed.

A CASE OF BILATERAL EMBOLISM OF THE MIDDLE CEREBRAL ARTERY.[1]

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THE patient is S. M., an Englishman, thirty-six years of age. There is no history of any cardiac trouble, rheumatism, or syphilis in himself or his family. He smokes to excess, drinks but little, and is by occupation a peddler, and obliged to be out in inclement weather.

For the past two years he has at intervals had quite severe pain of a dull, aching character in his ankles, unaccompanied by any swelling and also by any pain in other joints. During the past six months he has had almost constant headache, referred to vertex, and has noticed marked dyspnea and rapid action of the heart upon the slightest exertion, so that he was unable to peddle. For the relief of these symptoms he came to the hospital.

The patient, upon admission, was well-nourished, but pale. There was marked visible pulsation of the carotids and temporals, which were tortuous to their very termination. The radial pulse was full and bounding, rate 110—a typical Corrigan or water-hammer pulse.

A loud murmur was heard over the carotids and femorals, and in the latter an almost complete double murmur. A few moist râles could be detected over the larger bronchi. There was marked diffuse pulsation of the entire precordial region at each systole. The apex-beat was visible in the sixth left interspace—one inch to the left of the left mammary line. It was strong and heaving. The area of dulness was increased in all directions. Auscultation revealed at the apex a musical see-saw murmur, both systolic and diastolic sounds being replaced—the diastolic murmur being louder and more blowing in character, the systolic murmur being transmitted to the left. Over the pulmonary area the second sound was accentuated. Over the aortic area, a long, loud musical diastolic murmur was heard, that, being followed to the apex, gradually decreased in intensity so that the second murmur heard at the apex was the transmitted aortic murmur. There was a trace of albumin, and a few pale hyaline casts in the urine.

During the time that the patient was under obsertion he frequently complained of severe vertical headache and of attacks of vertigo, which were relieved by nitro-glycerin, gr. $\frac{1}{100}$, and caffeine citrate, gr. v, every four hours. No digitalis was given at any time, the hypertrophy of the left ventricle being sufficient to compensate for the valvular trouble. About four days before the patient's death, it was observed that the respiration was of a stertorous character; the patient could not be aroused, and coma developed. The pupils were equal, somewhat contracted, and feebly responsive to light. Supra-orbital pressure caused a contraction of the muscles of the left side of face, arm, and leg. The right naso-labial fold was obliterated, the right arm and leg fell perfectly lifeless, when released after being raised; there was apparently complete paralysis of the voluntary muscles of the right side of the face, of the right arm and leg. The respiration was irregular, almost Cheyne-Stokes in character, and stertorous. On account of the accompanying heart-disease, and the probability that a vegetation or calcareous mass had been detached, a diagnosis of embolism of the left middle cerebral artery was made. When the patient was examined twenty-four hours afterward, there was no response to supra-orbital pressure; both arms and legs, when raised and released, fell lifeless, as if paralyzed; there was now complete bilateral hemiplegia.

Ophthalmoscopic and electric examinations were unfortunately not made. The patient remained in this condition of deep coma, with irregular Cheyne-Stokes respiration for forty-eight hours longer, the character of the radial and temporal pulses and of the intra-cardiac sounds remaining unchanged. Death occurred very suddenly, the pulse, a few moments before, having been 120, full and bounding.

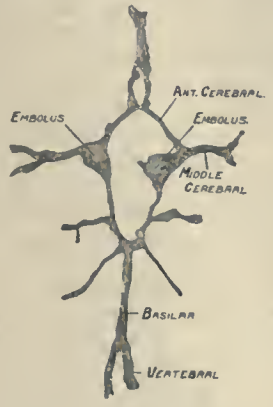
The post-mortem examination, thirty-six hours after death, showed evidences of hypostatic congestion in the posterior portions of both lungs. The pericardial cavity contained ℥viii of clear yellowish fluid. There were a few "soldier spots" upon the visceral pericardium. The coronary vessels were markedly tortuous, but pervious. The veins were congested, both on the anterior and posterior surfaces of the heart.

The aortic valves were incompetent to the water test. The valves were irregular in outline, and when approximated left a considerable interval between their free edges. They were covered with freely detachable calcareous vegetations, so that each valve was a mass of cauliflower excrescences; some of the latter were softer, more like masses of ordinary fibrin, and had not undergone calcareous change. The aortic orifice was narrowed. The mitral valve was so incompetent as to admit four finger-tips; the free edges were smooth; there was an elevation in the middle of the anterior cusp, the convexity of which was directed toward the left auricle; it was somewhat conical in shape, with an opening on the ventricular surface of the valve leading into a cavity, showing this to be an aneurism of the mitral valve. The cavity of the left ventricle measured 11 cm., its wall 20 mm.; there was thus marked excentric hypertrophy. The right ventricle was also hypertrophied.

The *membranes* of the brain were markedly congested, but not adherent or thickened. Upon dissecting out and opening the vessels of the circle of Willis, a calcareous embolus was found, as shown in the annexed illustration, at the intra-cranial termination of each internal carotid artery, situated at the point of origin of the middle cerebral arteries in such a manner as to completely occlude the lumen of both these vessels. The distal portion of each was empty and the vessel-walls were very anemic. The emboli were also so situated as to completely prevent the entrance of blood into the anterior cerebral arteries at their origin from the internal carotids.

[1] Read at the meeting of the Cook County Hospital Clinical Society of Chicago, November 5, 1891.

There were extensive areas of softening in the interior of the brain, bilateral and symmetrical, involving the corpus striatum and optic thalamus, and in the brain-substance surrounding the lateral ventricles on all sides, viz., the frontal, upper part of the temporal, the ascending parietal and the frontal convolutions.



The blood-supply of the brain is derived from the vertebral and carotid arteries; and the mode of origin of the left carotid explains why embolism should be more frequent on the left side. In the case reported the first embolus was undoubtedly that on the left side, causing right hemiplegia. The left carotid arises directly from the highest part of the arch of the aorta, and its course is almost a direct continuation of the direction of the current of blood in the aorta, whereas the right carotid comes from the innominate, which arises from the aorta at an angle with the course of the aortic blood-current. Hence clots washed from the cardiac valves pass more readily into the left carotid than into the right. The consecutive embolism first of the left and then of the right is easily explained, and yet is extremely interesting. The circle of Willis, it will be remembered, is formed by the two posterior communicating arteries, which pass one on each side from the internal carotids to the posterior cerebrals, into which the basilar divides, and by the anterior communicating artery, between the two anterior cerebrals of the internal carotid. The latter divides on each side into the anterior and middle cerebral, and from these and the posterior cerebral the blood-supply of each hemisphere is derived.

From the circle of Willis and the commencement of the three cerebral arteries, small branches arise that supply the central ganglia of the hemisphere and the adjacent white substance, while the three arteries themselves ramify over the surface of the brain and supply the gray cortex and the greater part of the white matter of the hemisphere. Between these central and cortical systems there are no anastomoses, nor do the central branches communicate with each other, so that embolism of a main vessel, like the middle cerebral, would lead to extensive anemic necrosis or softening.

The central arteries consist of two medial and four lateral groups, two on each side; the latter supply the chief part of the central ganglia, and the anterior lateral arise at the beginning of the middle cerebral arteries and supply the internal capsule, lenticular and caudate nuclei, and optic thalamus.

Of the supply to the cortex, that of the middle cerebral is the most extensive. This vessel divides opposite the island of Reil into four branches, which have the following distribution:

I. Third or inferior frontal convolution.

II. Lower two-thirds of ascending frontal and root of middle frontal.

III. Whole of ascending parietal, and superior parietal lobes, and part of inferior parietal lobe.

IV. Remainder of inferior parietal and posterior part of first two temporal convolutions.

From this last branch, near its origin, one or two large branches arise, which supply the greater part of the first and second temporal convolutions. The anterior cerebral supplies the remainder of the frontal lobe, the quadrate or lobus precuneus, gyrus fornicatus, and marginal convolutions of the mesial aspect. So that the extensive bilateral softening found post-mortem was in perfect accord with the experimentally determined area of distribution of the anterior and middle cerebral arteries.

In most cases of cerebral embolism the plug comes from the heart, and its source is either diseased valves, or vegetations that have been detached and carried along with the blood-current. The embolus may come from either the mitral or aortic valve, more frequently from the former, and especially when there is mitral stenosis. Embolism is most frequent between later childhood and middle life. There has usually been some antecedent cause for the endocarditis, *e.g.*, rheumatism, chorea, or scarlet fever. As in the case reported, the signs of organic heart disease are almost always to be recognized previously to or at the time of embolism.

An immediate exciting cause is rarely to be traced. In the case reported the patient had passed a comparatively quiet night in bed, and was found comatose, without any prodromal symptoms except an increase of headache. The plug in a case of embolism may consist of fibrin (usually decolorized), of vegetation, soft or firm, from a cardiac valve; sometimes of a calcareous mass from a valve of the heart.

The embolus is usually arrested where the artery is narrowed by giving off a large branch, very often at a bifurcation, as shown in the specimen. The middle cerebral arteries and their branches are the most frequent seat of embolism, because they are the direct continuation of the carotids.

In the case in question the emboli, which were calcareous vegetations, are lodged at the very termination of the internal carotids, so as to occlude both the anterior and middle cerebral arteries.

In rare instances only—one case being reported by Carrington[1]—have both middle cerebrals been obstructed. The effect of this almost simultaneous blocking was to cause an extensive area of anemic necrosis or softening, which pathologically represents broken-down nerve-elements separated by an effusion of serum.

The focal symptoms in the case were quite characteristic of a plugging of the middle cerebrals, viz., first, right hemiplegia, indicating embolism of the left side; then, twenty-four hours after, left hemiplegia, showing an obstruction on the right side. Whether aphasia was present or not it was impossible to determine. Bilateral obstruction is rarely simultaneous, but sometimes occurs in quick succession, as in the case reported. The differential diagnosis is especially to be made from cerebral hemorrhage and thrombosis. The prognosis in such a case as this is necessarily grave. Treatment is not likely to be of much avail.

CEREBRAL THROMBOSIS, WITH REPORT OF TWO CASES.[2]

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CHARCOT has with much truth said that he that is master of the circulation of the brain, is likewise master of cerebral pathology. This, of course, is not because of any lack of importance on the part of the structures through which the vessels pass, but because, in the first place, a thorough and accurate knowledge of the intra-cranial vascular system of necessity implies familiarity with the different vascular areas supplied or drained by any particular blood-channel; and in the second place, because lesions of the vessels constitute the pathologic basis in the large majority of all cases of cerebral diseases.

I have been frequently impressed with the belief that too little attention has heretofore been given to the venous as compared with that given the arterial circulation of the brain. Arterial lesions are, of course, more frequent than venous; but thrombosis and phlebitis of the cerebral venous channels, which usually go hand in hand, even if of less importance than the arterial, are still of sufficient moment to often compromise the life of a patient.

Two cases that have recently fallen under my observation have especially excited my interest in this subject, and I will first present a brief record of them.

CASE I (not seen during life).—Mr. S. D. M., aged forty-five years, an insurance agent; a heavy-set, active business man; had never suffered from any serious illness. On November 28, 1890, while standing at the head of the stairs at his residence, he slipped and fell, feet forward, striking his head on the steps as he went down. When he got up he appeared very much dazed, and said: "Let me get out doors." He returned in a short time, feeling very faint. Immediately afterward, and for about ten days succeeding the accident, he complained of pain in his head and back and frequent nausea, and he often vomited. During these ten days, he was in bed the greater part of the time. He often complained of a peculiar pain in his head, as though something was moving around in it, without designating just where. There were, unfortunately, no data showing his condition as to fever, circulation, etc., during that time. Subsequently, he went to his office and attended to his business, making frequent complaints, such as he had made while in bed at home. The nausea and vomiting persisted.

On the morning of December 17th, when about to set out for his office, he remarked that he was feeling badly, and that they need not be surprised if he should come home before evening.

On the 18th, he did not go to his office at all, but, as before, complained of nausea, pain in the head and in the back.

About half-past one on the morning of the 19th of December, his wife left the room to attend to a sick child. He expressed his disinclination to have her leave, because he was himself feeling badly, but said perhaps she had better go. She returned quietly to his room at three o'clock, when he was breathing regularly. She again returned at five o'clock and found him unconscious, with stertorous breathing.

A physician was summoned shortly after the discovery of his unconsciousness; the pupils were not markedly contracted, but the breathing was somewhat slow. No other information was obtained, the coma being then very deep and terminating in death at noon, December 19th.

On the morning of December 20th, at nine o'clock, the family requested Dr. Howard McCullough and myself to examine the skull and brain in order to ascertain whether there was any gross lesion of traumatic origin that would account for the death. We found the body well nourished; rigor mortis well marked; no external evidence of injury. Upon reflecting the scalp we found, almost in the center of the vertex, an ecchymotic spot about the size of a silver quarter, just beneath and involving the periosteum. Upon removing the brain we found marked adhesion of the dura mater of the convexities along the margins of the longitudinal fissures. The sinuses of the dura mater were obviously diseased. The lining membrane of the superior longitudinal and left lateral sinuses especially were roughened and covered with strongly adherent and

[1] Path. Soc. Trans., vol. xxxv, 1884, p. 108.
[2] Read before the Michigan Southern Medical Society.

coagulated blood. In the left lateral sinus an ante-mortem clot, firmly organized and about one-fourth of an inch long, completely blocked the sinus and terminated at the extremity in soft, dark blood of post-mortem deposition. The pia mater was intensely congested. The dependent portions of the ventricular cavity contained a considerable quantity of bloody serum—enough to very nearly fill the horns. Nothing further of an abnormal character was discovered upon coarse dissection of the brain. No microscopic examination was made, because of the sudden illness of myself before the brain had been placed in a preserving fluid.

CASE II.—On June 14, 1891, I was called in consultation with Dr. H. D. Wood, of Angola, to see Miss B. O., aged twenty-four years, and obtained the following history: The patient's health had always been good, except that from childhood she had been subject to sick headache. When a child she also had a discharge from the ear. Recovery from this was complete, and was never followed by any recurrence. About four months ago she had what was thought to be the grippe, though she did not go to bed or call a physician. Her symptoms were severe headache and general aching, lasting a few days. From this she made a fair recovery, but it was evidently not complete, for she remained weak and her family think there was progressive loss of flesh. About the first of May, 1891, Dr. Wood was called, and found her with a temperature of 101° and a pulse-rate ranging from 70 to 100. Since that time she has not been free from fever of about the same intensity. About the first of June (two weeks before I was called in consultation) she was seized with violent headache that persisted up to the time of my visit. There had been some nausea and a little vomiting. There were no obvious disturbances of motility, sensation, vision, or hearing, although no careful tests were made.

On June 13th, she grew apathetic, and gradually passed into a state of coma from which she could not be aroused.

At the time of my examination, she made no response to loud calls close to her ear. The conjunctival reflex was almost entirely abolished, and the pupils were moderately but evenly contracted and entirely irresponsive to light. There was no strabismus or nystagmus. There was marked edema of both eyelids, with moderate but still very perceptible exophthalmos. There was also considerable distention of the veins of the forehead; the left external jugular vein was very prominent. There was but slight response to a pin-prick on the feet, and the plantar reflex was abolished. I did not see the patient again, but she was very carefully watched by Dr. Wood, who reports that there were no new symptoms manifested, but an intensification of all the symptoms mentioned. The coma became deeper, the edema of the eyelids greater, the exophthalmos more marked, the distention of the veins of the forehead more prominent. Death occurred four days after my visit.

I made a diagnosis of cerebral thrombosis, probably of the marantic type, and gave an absolutely unfavorable prognosis, in which Dr. Wood fully concurred. I was especially anxious to be able to test the diagnosis by the findings of a post-mortem examination, but, though Dr. Wood made every effort to secure one, he was unable to do so.

In these two cases, in one of which the diagnosis was made during life, with no opportunity to verify it after death, and in the other discovered only upon post-mortem examination, we have illustrations of what I am inclined to think would be found much more frequently than is supposed, if the symptomatology were more fully understood, and the disease therefore more easily recognized. In running through the literature of this subject as contained in the standard text-books of the times, we are met with extremely vague and unsatisfactory clinical pictures to serve as the bases of diagnosis. By some authors the subject is treated as only of pathologic interest, and the consideration of the symptoms, because of their vagueness, is dismissed in a few words. The time has come when this position is not fully, if at all, justfied. There are certainly many cases of cerebral thrombosis in which the diagnosis can be made with as strong a degree of probability as obtains in many another well-recognized disease. In the attempt to study these symptoms upon an anatomic and physiologic basis, we must bear in mind that the venous channels known as sinuses of the dura mater are extremely complicated and quite extensive in their anatomic relations, and most diverse in regard to the importance of the structures with which they are severally in relation. The effects, therefore, of occlusion of one of these channels at any particular point would depend upon the anatomic and functional importance of the structures the venous blood of which travels toward the heart through this particular channel, and also upon the facilities for carrying the current through collateral avenues. When the superior longitudinal sinus is involved, headache is usually a prominent symptom, owing doubtless to the retardation of the blood-current from certain parts of the intra-cranial structures. In addition to this we have distention of the veins of the mucous lining of the nose, and epistaxis, therefore, becomes of frequent occurrence. The close relation of the petrosal sinuses to the mechanism of the ear points to their involvement when brain-symptoms follow certain forms of ear-disease. The blocking of the lateral sinuses would cause more or less complete obstruction of the current through the superior longitudinal sinuses. Turning now to the basis of the brain, we find wonderful provisions made for carrying on the circulation if one channel becomes obstructed. The sinuses upon opposite sides of the median line are united by transverse channels of large size, and in addition the anterior extremity of the system terminates in a large and important vein known as the ophthalmic,

which, passing through the orbit, is placed in direct communication with the external jugular through the facial vein.

The anatomic relations are thus extremely fortunate, from a diagnostic standpoint. For instance, the obstruction that prevents the blood from passing out of the ophthalmic vein, in a backward direction, gives rise to very definite and characteristic symptoms. Among others, there are distention of the frontal veins, edema of the eyelids, and exophthalmos. There are, of course, at the same time functional disturbances of the retina, ranging from slight amblyopia to complete amaurosis, with abolition of the light-reflex. Another circumstance that occasionally enables us to recognize occlusion is the very curious anatomic arrangement by which several very important nerves, namely, the third, fourth, and sixth, actually penetrate the wall of the cavernous sinus and pass through it on their way to the muscles that they supply, separated from the venous blood within the sinus by its lining membrane alone. It at once becomes very obvious that occlusion of the blood-current in the cavernous sinus, with the attendant outward pressure that must necessarily follow, by reason of the pressure exerted by the forces of the circulation through the capillaries, might very easily compromise the function of any or all of these nerves. In this way ophthalmoplegia, ptosis, or strabismus may become strongly corroborative symptoms in establishing the diagnosis. It is not my intention to review this extensive field in detail, but rather to point out a few of the more important and better established facts upon which we may fall back in establishing a diagnosis of cerebral thrombosis.

In the first of the foregoing cases, the question of diagnosis is, of course, not involved, and we may turn at once to the unfortunately imperfect clinical picture that we are able to obtain. Briefly, then, we may assume that occlusion of the left lateral sinus and plastic inflammation of the lining membrane of the superior longitudinal sinus gave rise to a train of symptoms of a fairly well defined character. The absence of a careful scientific study before death can, of course, be only vainly regretted. We know, however, that there had been persistent headache, with nausea and general malaise. Of the circulation and temperature, until within a brief time prior to death, we know nothing. Anatomically we find the pia mater, which normally pours its venous blood into these venous channels that had been obstructed, intensely congested, and we find further evidence of interference with the circulation by the bloody effusion, with which the ventricles were well distended, in symptoms and phenomena of circulatory obstruction.

In the second case, the diagnosis of thrombosis of the basal system rests mainly on six symptoms, namely: distention of the frontal veins, edema of the eyelids, exophthalmos, great distention of the left external jugular vein, abolition of the light-reflex, while unconsciousness, with slight fever, was, of course, corroborative of the existence of inflammatory action undoubtedly involving the lining membrane of the sinuses. I hold that in this case the diagnosis is positive, and taken in connection with the first case and the cases that have been reported, principally in Russia and Germany, will, I trust, assist in forming a rational foundation for the diagnosis of this not very rare, but rarely recognized affection.

Since writing the foregoing, I have seen another case that I think belongs in the same category.

On November 21, 1891, I visited Mr. L. T., in consultation with Dr. J. W. Cartwright, of Payne, Ohio, of whom I obtained the following history: About ten days previously the patient had been seized with a severe attack of facial erysipelas. This had run its usual course, and had yielded to the ordinary treatment. At the time of my visit there was practically nothing left of the dermatitis but the customary residual hyperemia and coarse desquamation.

Alarming brain-symptoms had developed in the last twenty-four hours, and I found the following conditions present: There was external squint, incomplete ptosis, nystagmus, comparative dilatation of the right pupil, and intense injection of both conjunctivæ. There was also partial coma, and hyperpyrexia, the temperature at the time of my visit being $106\frac{8}{5}°$. The patient died two hours later.

In this case the specific process had travelled along the radicles of the facial vein, and through their relation with the ophthalmic, along this to the cavernous sinuses. A similar connection has been reported in several published cases, in which a specific dermatitis had produced a phlebitis of the sinus by extension through the channels referred to. A very interesting case of cerebral thrombosis involving the left cavernous sinuses has recently been reported by Destot (*La Province Méd.*, Lyons, 1891, No. 24). In this case the specific process originated in an acniform pustule of the nose that was apparently benign. Like the last of my cases reported, it emphasizes one of the dangers of specific inflammation of the parts contiguous to the brain.

Tracheotomy in an Infant Four Days Old.—CLEGG (*British Medical Journal*, No. 1619, p. 68) has reported the case of an almost moribund infant, *four days old*, in which he performed tracheotomy on account of the presence of a large nevoid mass beneath the tongue, rendering respiration almost impossible. The child lived for thirty-six hours, but finally died.

SYSTEMATIC USE OF THE EYE IN TEACHING ANATOMY.[1]

BY W. P. CARR, M.D.,
OF WASHINGTON, D. C.

IN this iconoclastic age, a sentiment seems to be growing among medical men that lectures are of little use for didactic purposes. I wish to enter my protest against this idea, and to point out what I consider an important method of enhancing their value. The aim of the lecturer, I take it, is not so much to teach anatomic details that are much better learned from books and dissections, as to teach the student, first, how to study, how to understand, how to fix in mind the broad outlines and principles of the laws of morphology, the meaning of structures; and, secondly, to teach him those methods of observation that will enable him to add the necessary details for himself. In doing this we all recognize the importance of engaging the eye as well as the ear of the student. I have become more and more convinced of the importance of a systematic appeal to the student's eye and ear at the same time, and more and more convinced that word-pictures alone, no matter how forcible and true, make but comparatively dim and transient impressions upon the brain. Most anatomic facts are remembered by means of mental pictures—mental photographs upon the brain. Suppose you wish to remember the shape of some object. You call up a mental picture of it that you have, at some former time, stored away in your brain. Not only so, most of these mental photographs are composite photographs, made by numerous impressions, placed one over the other. Especially is this the case when the object to be remembered is a familiar one; and frequently, blended in the general outlines of the picture, and yet distinct, you may recognize some individual object of the class you wish to recall. Let me mention the great trochanter of the femur. Immediately there rises before your mind's eye a representation of the upper end of that bone. You see the trochanter, its position, shape, and relations; and most likely you recognize in the composite the outlines of some particular femur that you have handled oftenest, or, that diagram in your Anatomy that so frequently meets your eye. These facts show, I think, that it is by means of composite mental photographs that we retain the memory of form, memory of relation, and memory of position. The important question is how best to produce and fix these images.

Naturally, different persons possess in very different degrees this power of mental photography, as is evidenced by the ease with which some recall the features of absent friends, and the utter lack of such ability in others. But I am sure the faculty can be cultivated and brought to a satisfactory degree of efficiency in all, or nearly all persons. To do this we must begin with simple figures, and gradually add details. Everyone can remember such simple figures as the cross, square, circle, etc., but few can carry in mind a complicated arabesque. I think the older anatomists had some such idea in mind when they tried to find in the bones fanciful resemblances to familiar objects. They were trying, perhaps unconsciously, to use some simple image already formed upon the brain, as a durable basis upon which to build a more elaborate composite. But the idea may to great advantage be carried much further. I shall never forget how, when beginning the study of anatomy, I was helped in fixing the human ethmoid by a few chalk-marks placed upon the board by my professor, Dr. Elliott Canes. Simply a cross, to represent a front view of the vertical plate and christa galli, and the horizontal plate, and an oblong mass of white suspended from the arm of each cross, to represent the lateral masses. By comparing this image with the bone itself, a mental photograph was formed too simple ever to be forgotten. Having formed, in this way, a simple, durable image, it becomes an easy matter to modify it in detail. We may add the turbinal processes, the ossa plana, show their relation to the orbits and the frontal bone, and having gone as far as convenient with the chalk, refer to more elaborate diagrams for details, and finally let the student finish by studying the bone itself. And how much more intelligently he can do it, after we have prepared him in this way by giving him a simple, durable, but plastic image as a basis, and by explaining to him the morphologic significance of the bone, as well as other interesting and practical facts relating to it. All the other bones may be treated in the same manner. The superior maxilla, for instance, may be built up on a triangular pyramid; the scapula upon a triangular prism, corresponding exactly to the triangular rod of cartilage from which it is developed, and even a bone of as variable form as a vertebra may be illustrated in such manner that a composite mental photograph of it is formed in which all of its variations are recognized, from the stunted tip of the coccyx to the typical dorsal vertebra, or the occipital bone, and even the other vertebral segments of the skull.

The ruder the drawing the better, for we do not now wish to impress the shape of the component parts, but the shape of the bone as a whole, and the relative position of its parts simply represented by masses of black and white.

There are, however, some things that cannot be illustrated by even the most carefully prepared flat

[1] Original abstract of a paper read before the Association of American Anatomists in Washington, September 23, 1891.

picture. Such things as the facial nerve in the aqueduct of Fallopius, the ventricles of the brain, the fissure of Sylvius, cannot be drawn satisfactorily upon a plane surface. It is impossible to show the thing itself to a large class of students, on account of its small size. In such cases we must resort to models large enough to be seen from all parts of the room. It will not answer to have a small model in the hands of each student, unless, with a pointer, we have a demonstrator stand over each student as the lecture proceeds. For teaching purposes I have a large, rough model of the left side of the brain, made of papier-maché, five feet long, and yet light and easily handled. It is rough and apparently simple-looking, and yet I can show upon it the relative position and general shape of nearly every important part of the brain, both internal and external. I conceived the idea of making it, mainly to show what I cannot show in diagrams, the lateral ventricle, particularly its descending horn, the manner in which the pia mater enters to form the choroid plexuses, the velum interpositum, etc., and the fact that the five vesicles of the fetal brain remain distinct in the adult.

My conclusions are:

1. That we remember form, position, and relations by means of mental photographs.

2. That these are composite photographs.

3. That they may be easily modified from time to time, but cannot be easily effaced or radically altered.

4. That these images are formed by the eye, and understood through the ear.

5. That the power of mental photography varies in different persons, but may be cultivated in all, or nearly all, to a satisfactory point.

6. That the way to do this is to produce, first, a very simple impression, which, consequently, will be durable, and then more and more complicated images, that will not only coincide with and strengthen the first, but will, at the same time, add the necessary details.

7. That in doing this the primitive designs are best drawn upon the blackboard before the student's eyes; and that, afterward, a series of large diagrams should be used, or models in case diagrams are not satisfactory.

8. That the student is by these means taught how to appreciate and study Nature for himself in a calm, scientific, and observing manner.

The Prophylaxis of Scarlatinal Nephritis.—In more than a hundred cases of scarlatina seen in the course of six years, in which the patients were for three weeks kept upon a milk diet, ZIEGLER has not once encountered nephritis as a complication.—*La Semaine Méd.*, No. 4, 1892.

ORIGINAL LECTURE.

ELEPHANTIASIS ARABUM OF THE LEG; LIGATION OF THE FEMORAL ARTERY; RECOVERY: SUBSEQUENT PHLEBITIS AND THROMBOSIS; SEPTICEMIA; DEATH.

A Clinical Lecture
delivered at the Buffalo General Hospital, Surgical Clinic, November 21, 1891.

BY PROF. ROSWELL PARK, M.D.

ALBERT J., thirty-six years of age, came to the Buffalo General Hospital in October, 1890, giving the following brief history: Fourteen years ago he fell from a trapeze, and injured the right hip and iliac region. He suffered pain and soreness in the part for a number of weeks, after which time he resumed his work as wood-carver. Not until six months later did the present swelling commence, and the enlargement of the limb since then has been gradual but constant. It has finally attained such proportions as to force the man to give up his occupation. He has never suffered from any constitutional disease. The family history is excellent. He has never had upon the leg any ulcer or fissure of the skin from which fluid has escaped.

This brief history is all that is attainable, but it is, perhaps, sufficient for present purposes. I expose the lower part of the body and show you the tremendous difference between the right and left lower extremities. In order to have measurements for subsequent comparison, I will use the tape-line and give you the circumference at the following points:

		Right.	Left.
Ankle	(inches)	13½	9
Knee	"	22½	15
Middle of thigh	"	28½	20½

You will observe no ulceration anywhere about the skin, although around the middle of the leg there is great thickening and roughening of the epidermis, which presents quite a corneous appearance. There is nothing else for which this condition can be mistaken. We have here to deal with a case of elephantiasis Arabum, or the common form of elephantiasis known by the name pachyderma, and, also, from its frequency in the West Indies, as Barbadoes leg. The condition, virtually, is a hypertrophic affection of the dermal and subdermal tissues, with enormous thickening of the skin and more or less edema. Such a condition as is here presented is quite rare in this region, although very frequent in the tropics; in fact, the disease in any such form as this is well-nigh unknown in Buffalo. I have seen a similar affection confined to one hand and forearm in a young man, at the time an inmate of the penitentiary, and I am familar with a case in an adjoining town of a decrepit elderly woman, whose feet and legs, up to the knees, are involved in a similar condition. These three cases comprise my entire experience in eight years in western New York.

Pathologically, the disease, when of the acquired form, begins as an inflammatory affection of the bloodvessels, which sometimes is so acute as to cause a violent cellulitis resembling erysipelas, at other times so chronic as to

be accompanied by virtually no inflammatory phenomena. The cases in which the lower limbs are involved nearly always begin with acute manifestations. This is not quite true of elephantiasis of the genitals, of the upper part of the body, or of the face. The lower extremities and the external genitalia are by far the most commonly affected regions. In various treatises you will see pictorial representations of extreme cases of this condition; for instance, where one or both legs are so enormously enlarged as practically to confine the patient to the recumbent posture; also cases in which the scrotum is so involved as almost to touch the floor, hanging like an immense bag between the limbs, and where the penis is entirely lost in the thickened integument, only a minute opening and an excoriated groove marking the site where the urine escapes. In females the labia and the clitoris are similarly affected. But such instances as these are rarely seen outside of hot countries, and they have most frequently been reported from India. In such cases as this before you, the disease usually begins as a cellulitis with excessive edema, and with lymphangitis and perilymphangitis, often even with phlebitis and periphlebitis. Above the limit of swelling, purplish-red lines will often be seen extending toward the trunk, showing the implication of the lymphatic vessels. It is common in such instances to get a history of recurring inflammatory attacks, by each of which the preëxisting condition is made worse. As these cases progress, the epidermis becomes very much thickened in spots, and papillomatous outgrowths of large size, such as you see upon this man's limb, appear. As the surface becomes thus hardened and corneous, fissures or cracks are formed, which extend, to become excoriations and even foul ulcers, from the former of which a thin serous fluid dribbles or oozes, this fluid being pure or nearly pure lymph; while from the ulcers there comes a discharge of thin sanious pus. In ill-nourished patients, and in those careless in the matter of personal cleanliness, this condition may become offensive and disgusting. There is little pain, patients complaining for the most part merely of the augmented size and weight of the part involved, suffering but little, unless a fissure extends down to a point where a nerve is exposed, in which case we have to deal with an acutely irritable fissure or ulcer.

So far as the causes of elephantiasis are concerned, we may divide them into two categories and state that elephantiasis may be of congenital or of acquired form. Both of these forms are practically connected with the lymphatic system. Whenever you have the opportunity, I advise you to consult a somewhat rare little book by Dr. Busey, of Washington, upon *Congenital and Acquired Malformations of the Lymphatic System*, which is a perfect mine of curiosities and clinical facts relating to the subject of this lecture. As you well know, varicosities of the lymphatic vessels may occur congenitally, just as they do in the venous system, while at other times the lymphatics are congenitally deficient or some anomalous condition exists by which their proper channels of communication with the central lymph-stream are cut off or obstructed. It is possible that from some such cause as this an infant may be born with the beginnings of this malady implanted within it, but it is not so much of the congenital as of the acquired form of which I wish to speak to you. Of this form we may say that it is always inseparably connected with some impediment to the return of the lymph-stream, whether this be in the lymph-vessels, in the bloodvessels, or in the surrounding tissues. In this particular case, I imagine that, as the result of the injury which this man sustained many years ago, there was either a rupture of the principal lymph-trunk of this extremity, or some intra-pelvic inflammatory or thrombotic condition, by which the return of lymph from this leg was gradually impeded, as the result of which obstruction the present condition has been slowly engendered. I can find no other explanation for it in his case. It may happen to you to find in some other case, which will remind you of this, a history of some such trouble as phlegmasia alba dolens or of long-standing varicosities, with subsequent phlebitis and thrombosis, resulting in venous and subsequent lymphatic obliteration, or of some more or less extensive ulcer that has become inflamed and has set up a train of disastrous sequelæ, or of some injury such as fracture, penetrating wound, violent contusion, or something of that kind. Whenever this disease is mentioned there comes naturally into one's mind that affection which, before all others, is its most frequent cause in tropical climates. I allude to the presence in the system of a parasite known as the filaria sanguinis hominis, which is a very minute, thread-like worm, upon which the researches of Manson have thrown a flood of light and the life-history of which he has revealed. It appears from his studies that the microscopic embryos of this worm abound in drinking-water in regions where the disease is best known. This water is taken into the system; the embryos fail to be killed by the digestive juices, but pierce the intestinal wall and are taken up with the products of digestion by the absorbents. Once having gained an entrance in this way, they select the lymphatic vessels as their habitat, and here they manifest a peculiarity that has no analogue that I recall in the study of disease in man. Within the innermost recesses of the lymph-nodes and lymph-vascular organs they hide, as it were, during the active working and waking hours, but at about sunset they emerge from their hiding-places and are then found in the lymph and especially in the blood, where they sport and play until about the hour of sunrise, when they retire for the day, again to go through this diurnal or rather nocturnal program. There is nothing chimeric or fanciful about this account. Filaria disease has been carefully studied both in England and in India, and hundreds of observations attest the truth of these statements. The disease has even been experimented with in this way: By making those subject to it sleep during the daytime and work or keep awake at night, the program given has been exactly reversed; in other words, the filariæ disport themselves in the blood during the hours of rest and sleep, and retire completely from observation during the hours of activity. These statements do not constitute a digression from the subject of this lecture, but serve to explain the most common etiologic factor in the production of this disease the world over. It is by the presence of these minute organisms within the lymphatic vessels that there is set up a condition of chronic inflammation, of dilatation, and of obstruction of the natural lymph-channels that slowly brings about this enormous distention and hypertrophy of the

soft parts. In the case in hand, however, inasmuch as this man has never been in tropical climates and presents the disease in one limb only, there is no reason to suspect that we have here to do with the results of filaria disease.

So far as diagnosis is concerned, there is virtually nothing else for which such a condition as this can be mistaken. One has to decide really only between the congenital and the acquired form, a matter that the history of the case at once settles.

So far as life is concerned the prognosis is usually not bad; the question in such cases is mainly as to how long the patient can tolerate or survive the anatomic condition with which he is handicapped; but so far as recovery is concerned, the prognosis is bad, there being but little, if any, possibility of any such happy termination. On the contrary, there is rather danger of a continuance of growth, together with the disastrous results of greater and greater separation from the source of nutritive supply and of the occurrence of sequelæ, such as ulceration, including the various phenomena of septic phlebitis and of sepsis in other of its various manifestations. With great care and attention to cleanliness, with rest of the part, and perhaps with such applications as shall keep the epidermal surface anointed and prevent the formation of fissures and excoriations, patients may be made reasonably comfortable, although the real progress of the disease be not stayed.

So far as radical treatment or cure is concerned, it can only be applied in one of two ways—either by complete ablation of the part, or by cutting off the principal channel of nutrition and, as it were, starving the limb. In 1851, the late Dr. Carnochan, of New York, first suggested in such cases as this the ligation of the principal artery of the lower extremity. He carried this out with some measure of success, and his practice has found imitators in all parts of the globe. The principle upon which this surgical treatment is based is good; we run the risk, however, of overdoing that for which we are striving, and there is always danger of sloughing or even of gangrene from the operation.

In the present case, this man has worn bandages and elastic stockings of various design and manufacture, and he thinks that by the continuous pressure that they have exerted the rate of growth of the leg has been somewhat checked; but he has now reached a point where it is no longer possible for him to pursue his trade, and he desires to have done whatever offers any prospect of restoring his usefulness or else of terminating his career; and he has accepted very gladly the proposition made to him to have the femoral artery tied, although I have not failed to set forth to him the unpleasant possible results of such an operation. Accordingly, he presents himself before you to-day for this purpose. The operation has nothing about it peculiar, save that in such a case as this, in which the pachydermatous condition extends so high in the groin, the operation will be mechanically more difficult, although, I apprehend, no more dangerous.

The operation was performed October 25, 1890, under ether. The prediction with regard to the mechanical difficulty of the ligation of the femoral artery below Poupart's ligament was justified by the fact that it lay at such great depth. The necessary incision had to be made much longer than usual, and only after penetrating to a depth of three inches was the artery reached. In other words, the artery had to be tied at a depth corresponding to the length of the index finger. Otherwise the operation passed off without incident. It was made after the usual aseptic manner and the wound was covered with aseptic dressing. The limb was wrapped in cotton-wool and placed on a single inclined plane. The patient recovered from the procedure without accident or particular delay.

One month after the operation that was performed in your presence, I show you the patient with elephantiasis, in order that you may judge for yourselves of the result. I recall to your minds the measurements taken upon a previous occasion, and repeating them, I enable you to see that there has been a decrease in the circumference of the knee and thigh of very nearly five inches. The circumference at the ankle has decreased only an inch and a half, or perhaps two inches. You may judge of the man's general condition for yourselves, and you hear his statement to the effect that he moves the leg with much less sense of effort. He expects now to leave the hospital within a couple of weeks, and he has promised to return after a while and submit himself once more to your inspection.

January 20, 1891. The promise that this patient made to you upon the occasion when you last saw him has been fulfilled, but in quite an unexpected way, for this time he is brought into the clinic-room upon a stretcher and in almost an unconscious condition. He left the hospital as he intended; he went back to work; but from some cause, concerning which his present condition prevents us from learning, he was brought in by the ambulance yesterday in a semi-delirious and irrational state of mind, with high fever and with the appearance of the limb that I shall show you. You see that it is now once more enormously swollen, and it presents every local appearance of inflammation, especially along the course of the superficial veins; you will note that the skin is red and very edematous, and that he can scarcely move the limb at all. I am thus unable to tell you how this has occurred, but I show the case to you now as one of intense phlebitis, with every evidence of thrombosis and of septic infection, and I may say now that his condition is one that justifies a most unfavorable prognosis. Were it not that he can be moved without visible suffering, I should hardly have ventured to bring him before you. I imagine that with his present condition he cannot live forty-eight hours. To just what extent this accident depends upon the result of the operation I am quite unable to say. Certainly, as you know, he was temporarily benefited by the operation, and was perfectly satisfied with its immediate results. There was no phlebitis at that time, and I imagine that he has either been intemperate or careless about exposure, or both, in order to bring about the state of affairs that you see here.

The patient died about thirty-six hours after he was exhibited to the class. An autopsy revealed a condition of septic phlebitis with general septicemia. There were no metastatic abscesses. The right lower extremity was enormously enlarged; the integument and subcutaneous tissues were thickened, hanging in folds. The arch of the diaphragm, on the right side, reached to the fourth inter-

costal space; on the left side to the sixth rib. The pleuræ were free and normal, save for a few slight bands at the right apex.

The pericardium was normal. The heart weighed thirteen ounces; the aorta and pulmonary valves were competent. Behind the tricuspid valve was a well-organized clot. The endocardium and myocardium of the right side were normal. The left endocardium was deeply injected (not post-mortem staining), otherwise normal. There was slight atheroma. The aorta, the aortic valves, and the mitral leaflets were slightly injected. The left lung weighed nineteen ounces. It was emphysematous and edematous, and presented minute petechiæ beneath the pleural surfaces.

The bronchial mucosa was injected. There were patches of atheroma in the bronchial vessels (pulmonary); minute infarctions in the right lung; general emphysema, and edema of the lower portions.

The left kidney weighed nine ounces; the capsule was adherent, the cortex diminished, and markedly injected. The right kidney was like the left.

The spleen weighed thirteen ounces; it was soft, enlarged. The liver was fatty. The skin of the right lower extremity was much thickened, and with the subcutaneous tissues hung in folds from the leg. There was an increase in the fibrous septa of the subcutaneous tissue. The femoral (right) artery was excised at the point of a former ligation (two months previously), showing a well-organized clot. The collateral circulation was carried on by the profunda.

A cause of the elephantiasis was not found.

Examinations of skin, under the microscope, showed that the epidermis was enormously thickened, with a marked increase of connective tissue in the cutis vera, this last having widely dilated lymph-spaces; there were several areas of small round-cell collections in the connective tissue of the true skin. About the vessels of the lungs there was a marked increase of connective tissue, similar to that of the skin; this was also edematous.

CLINICAL MEMORANDA.

A CASE OF PARALYSIS FOLLOWING MEASLES.

BY JAMES STRATTON CARPENTER, A.M., M.D.,
OF POTTSVILLE, PA.

THE rarity of occurrence of paralysis as a sequel to morbilli has been fully shown by Dr. H. B. Allyn, in a recent number of THE MEDICAL NEWS, wherein the author was able to collate only forty-one cases of this disorder after a most extended research. In a practice of ten years I have seen but a single case, which, until I met with Dr. Allyn's article, had been well-nigh forgotten. I desire to place this on record, as adding one more to the number of cases thus far observed.

Gertrude E., a child of three years of age, was treated by me for a mild attack of measles, two other children in the house being sick with the disease at the same time, and in an equally mild form. Three weeks prior to the outbreak of measles, I had treated them for a mild scarlatinal trouble, which had been fully recovered from before the measles had appeared. On the third day of the child's illness the mother noticed that she was breathing heavily, and found it impossible to arouse her from the stupor in which she lay. Being sent for hurriedly, I found the little patient in high fever, with stertorous breathing, and apparently unconscious, but she was able to answer my questions, although she immediately relapsed into stupor. I had her placed in a lukewarm bran bath, and prescribed appropriate remedies. Within thirty-six hours I had the satisfaction of obtaining a renewal of the favorable conditions that had preceded the attack, and in a few days more the girl was convalescent. The first attempt to walk, however, revealed an inability to lift the right foot, which was dragged after its fellow in efforts at progression; the same motor disturbance was discovered to have affected the right arm, after I had been summoned; this had hitherto escaped attention because of the child having always been left-handed. The loss of co-ordination was shown in the child's attempts to pick up small articles from the floor, the hand not only being unable to grasp the object, but being projected forward with some violence, or to either side of its destination; and, finally, when anchored safely at the objective point, after successive trials, the sound member was called to the aid of its palsied fellow to secure the desired article in full possession.

The cause of this palsy was not at all easy for me to ascertain at that time, nor was the solution of the problem decided upon at all satisfactory to myself. That paralysis could follow measles pure and simple I had never been taught to expect, nor had my reading ever furnished me with any example of this sequel of morbilli. I had been unable to discover the slightest trace of diphtheritic trouble in the entire progress of the case, and when informed that the child had had a spasm prior to my reaching the house, at the time of the occurrence of the unfavorable symptoms noted, I was particularly careful to reëxamine the throat, fearing lest some implantation of a diphtheritic character had occurred. I discovered nothing more than the usual congested condition of the fauces that is always found in this disease. But paralysis after measles *without diphtheria* as a causal factor seemed hardly admissible, and my conclusion, therefore, was that a *concealed* post-nasal diphtheria was responsible for the disturbance, and I so stated to the family.

That there was ample excuse for not having a too familiar acquaintance with this sequel of measles is readily shown if we consult the pages of Pepper's *System* in reference to the "complications" and "sequelæ" of morbilli, which, according to the writer of the article in question, "it is a difficult matter to dissociate." Under "complications" he says: "Among the more common disturbances of the nervous system convulsions play an important *rôle*. The epileptoid seizures of the prodromal stage generally terminate favorably, but in some cases of a malignant character the onset of the disease may be ushered in with fatal convulsions. Convulsions *in the later stages are apt to have a lethal termination* (italics mine), as they usually occur in connection with some grave complication, *particularly of the thoracic organs.*" And under the head of "sequelæ" we find this most important subject dismissed in a single phrase: "and, lastly, various derangements of the nervous system." That the writer, in the preparation of the article, had access to a wide range of authorities is shown in a foot-

note to the title of his essay, yet surely, if clinical evidence is to be regarded, "convulsions in the later stages" are by no means significant of "a lethal termination," unless, as Dr. Allyn says in his article, they should be "repeated," and even under these circumstances they but "increase the gravity of the prognosis, both as regards life and as regards the recovery of power in the palsied members." "Convulsions in the later stages" of measles, then, should never fail to attract attention to the possible occurrence of this rare form of cerebral palsy. In my own case it was not discovered until the child renewed its attempts at walking, *after* convalescence had apparently been established, the coincidence of the child's left-handedness, in this instance, with a right-sided palsy, preventing an earlier discovery of the lesion.

The treatment pursued was the administration of strychnine in ascending doses, beginning with gr. $\frac{1}{60}$ and reaching to as large a dose as gr. $\frac{1}{16}$, three times daily, before recovery was effected, which was complete. There was no aphasia present in this case.

A CASE OF NON-TRAUMATIC HEMORRHAGE INTO THE SPINAL CORD.

BY J. JOSEPH KINDRED, M.D.,
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EXCEPT in respect to its very rapid termination, the following case in its clinical course and history presents a rather typical instance of non-traumatic spinal hemorrhage.

The patient, J. G., an intellectual married man, fifty-nine years of age, had been in good health up to the date of the present trouble, excepting for occasional severe attacks of intercostal neuralgia.

He was well-built, rather muscular, always temperate and active in his habits. There was positively no history of syphilis or of any long illness. A few hours previously to the first symptoms of the spinal hemorrhage, he had attended to business with his usual enthusiasm, and expressed himself as feeling unusually well. At the moment of the appearance of the sudden pain and other symptoms he was making some mental effort, not amounting, however, to any unusual strain. Without any prodromal sign he fell forward on the floor, at first seeming very slightly stunned as if from shock, but not losing consciousness, even momentarily. Placing his right hand to the cardiac region he complained of having there excruciating pain, which from his description resembled that of angina pectoris. There were also pain in the dorsal region, spinal tenderness, and the "cincture feeling" over the chest and abdomen. After walking with assistance into an adjoining room, a feeling of beginning numbness in the lower extremities was complained of. Thorough examination showed much anesthesia below the fifth dorsal vertebra, with beginning paralysis of the muscles connected with the segment of the cord to which the pain had been referred. The reflex excitability was diminished. Three hours after the initial symptom, respiration was much disturbed; the pain, almost agonizing at first, had greatly subsided, while the power of motion in both legs was completely lost. The implication of the spinal centers controlling the bladder and bowels was indicated by the patient's inability to expel either urine or feces. That the hemorrhage had occurred high up in the dorsal region was suggested by persistent priapism and by intestinal flatus, showing paralysis of the splanchnics. The temperature was normal; the pulse 98. The abdominal and other muscles concerned in respiration rapidly became paralyzed; the respiration grew more and more labored until death ensued—six and one-half hours from the beginning of the attack. The usual course of treatment had been pursued. One point of special interest was the very rapid termination of the case. In his work on *Nervous Diseases*, Dr. Allan McLane Hamilton states that he has never seen a fatal termination in such cases within several days, and doubts if such could be the case, unless the hemorrhage should occur at a very high point, involving a number of the intercostal nerve-roots; he further says that even this is improbable. Dr. Hammond, however, takes the opposite position, and this case, as the autopsy shows, certainly seems to sustain the latter view.

The diagnosis here was made quite clear by the rapidity of the onset; the intense, localized pain slowly subsiding; the absence of marked pain in the limbs; the absence of fever at the onset; the absence of cerebral disturbance; by the early occurrence of anesthesia extending around the body and terminating about on a level with the fifth dorsal vertebra, in a very narrow line, above which there was no disorder of either motion or sensation.

Thus, it will be noticed, there were present many of the signs diagnostic of spinal hemorrhage, as well as others common both to it and to hematorrhachis, myelitis, and other diseases of the cord.

The differentiation was made from spinal tumor, aneurism, bone-disease, and inflammatory conditions of the cord resulting in paraplegia, by the suddenness with which the decided symptoms came on, while the condition differed from cerebral hemorrhage in the patient's undisturbed consciousness and speech. Embolus was also thought of as capable of producing some of the sudden symptoms, but this was excluded on the ground that it would hardly cause such complete paralysis.

Spinal meningeal hemorrhage remained to be excluded, and this was done because the sphincters of the bladder and rectum were so early affected; the pain was not marked in the limbs, and death very quickly ensued.

At the autopsy, careful examination of the cord showed an appearance of bulging just above the level of the fourth dorsal vertebra. Dissection at this point revealed a darkish-red clot, about the size of an almond, lying almost wholly in the gray matter. The parts of the cord immediately adjacent were somewhat softened, and were found by microscopic examination to be somewhat congested. Beyond this nothing abnormal was found.

As to the cause of the hemorrhage in this case, it is not easy to say, as the patient's history was negative concerning those conditions that are known to predispose to spinal hemorrhage, such as blows or traumatic injuries of the back, excessive fatigue, undue venereal indulgence, disease of the vertebra, and, rarely, the toxic influence of strychnine and the secondary effects of tetanus.

A remarkable case due to sudden congestion at the

menstrual period is reported by Goldammer in *Virchow's Archiv* for January, 1876.

The termination of this and of almost every other case of hemorrhage into the substance of the cord seems to expose to some doubt the correctness of the diagnosis in many of the cases reported as having recovered.

Many cases in which marked improvement takes place in a month or two, are doubtless cases of meningeal hemorrhage and not hemorrhage into the substance of the cord.

There are, however, well-authenticated cases of complete recovery following hemorrhage into the substance of the cord, among the most interesting of which is one caused by a blow upon the back, reported in 1867 in a monograph on the subject by Dr. John Ashhurst, and another observed by Cruveilhier.

PAGENSTECHER'S OPERATION FOR ENTROPION AND DISTICHIASIS, ILLUSTRATED BY TWO CASES.

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IN Von Graefe's *Archiv für Ophthalmologie*, vol. xxxvi, pt. iv, is a description of Pagenstecher's modification of Hotz's operation for the cure of entropion and distichiasis, with the report of seventy successful cases and no relapse after five or six years. The writer, Dr. Otto Scheffels, expressed himself unqualifiedly in praise of the procedure and cordially recommended it. It is well known that many operations for the relief of this distressing affection have been devised, and none has proved more than moderately successful. The inverted and distorted eyelashes are found almost exclusively in old cases of granular lids. Granular conjunctivitis, or trachoma, should be regarded as a malignant disease, and frequently fatal to sight from loss of transparency and uncorrectable alteration in curvature of the cornea. These defects are caused in the first instance by the friction of the roughened lid, and later of the deformed cilia, distorted from their proper direction, over the smooth epithelial surface. The conjunctiva is shrunken and atrophied. The tarsal cartilage is thus more or less abnormally curved, and partial ptosis usually follows.

Pagenstecher's operation consists of the following steps: An indentation is made in the skin in the middle of the lid, one-half mm. below the tarsal border, in order to mark the exact site of the subsequent cut. The lid-forceps is next adjusted, the greatest care being exercised that the conjunctiva and blade are smoothly and exactly in contact. An incision is now made, commencing at the indentation and carried down to the cartilage, extending transversely to the right and left in its entire width. The upper half of the cartilage is exposed by freeing it from overlying muscle and fascia, carefully pushing those fibers above the cut upward and backward, and those below downward. The placing of the sutures is the final step. This should be carried out with the greatest nicety, since the success of the operation depends upon restoring the tendon of the levator palpebræ to its former position and attachment, from which it had become dislodged by the paralyzed fibers of the orbicularis. A curved needle, armed with moderately thick silk thread, is entered first in the center of the pad of muscle and skin, 2 mm. above the ciliary border, passed through the pad out into the cut, through the upper border of the tarsus and through the tendon of the levator, which has been grasped by a forcible thrust of the forceps held in the operator's left hand, and brought forward. Two other sutures are inserted in a similar manner, one on either side of and equidistant from the first. All are firmly tied. The divided integument is left open and allowed to heal by granulation. In four or five days the threads are removed.

CASE I.—F. G., thirty-one years of age, was the subject of granular lids for many years. Both upper lids had been unsuccessfully operated on in two clinics in Germany, for entropion and distichiasis. At the time of her first visit, V = R. $\frac{20}{CC}$, L. $\frac{5}{CC}$; the conjunctivæ were shrunken, the corneæ opaque. The left eye I considered nearly hopeless from dense opacity and commencing staphyloma. The right eye was the seat of severe pain from the constant irritation from the inverted lashes. The patient was obliged to remain in her room three days in every week, on account of pain and photophobia. A few weeks' treatment by depilation, atropine, etc., was of no permanent benefit. In December, 1890, the operation as described, was performed, the patient making a good recovery in a few days. Relief followed at once, and upon the occasion of her last visit, V in R. had improved to $\frac{20}{XL}$, and in L., in which an iridectomy was done, to $\frac{20}{CC}$. The eyelashes have attained their normal length, curve, and direction, and not one has since been extracted.

CASE II.—M. S., seventy years old, had granular lids of thirty years' duration, causing severe entropion, unrelieved by previous operations. The R. cornea was opaque and perforated by extensive ulceration. The L. was densely opaque and vascular. V = R., 0; L., light-perception. Pagenstecher's operation was performed on the L. in April, 1891. The patient was seen frequently during the summer, and there was no return of the entropion. V commenced to improve soon after the operation, continuing up to the time of her last visit, when it equalled $\frac{20}{CC}$, surely a remarkable result when it is considered that this eye had been of no service to her for many years.

I am aware that two cases are not sufficient to establish the invariable utility of any new surgical procedure, and that the lapse of time after the operations until this report would be held by many as insufficiently long to permit of a conclusive test. These cases must be regarded as simply confirmatory of Pagenstecher's good results, and not introductory of a new operation. It should be remembered, however, that they were extreme cases. Each had been the subject of previous operations that not only had not cured the disease but rendered later operations more difficult of performance and with less prospects of success. The results obtained were eminently satisfactory, and convincing to me, at least, that the procedure is founded upon proper principles and will obtain the first place among the methods devised for the relief of entropion and distichiasis.

SCARLATINA SINE EXANTHEMATE.

BY W. R. LEE, M.D.,
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MEIGS and Pepper, in their work on *Diseases of Children* (seventh edition, 1883, p. 805), say: "It is impossible to distinguish scarlatina from the other eruptive fevers by the symptoms which precede the eruption. The only signs upon which a diagnosis at that time might be grounded are great frequency of pulse, which is characteristic of this disease, some soreness or redness of the fauces, and the prevalence of the disease in the community. But these are all exceedingly fallacious, and the physician should be content to wait for the eruption before he ventures to speak with certainty. After the eruption has come out, it can scarcely be mistaken for anything else, except it be roseola."

I shall not take issue with the statement quoted, but when one encounters a disease that presents all of the symptoms of scarlatina, *except the characteristic rash*, the situation becomes an embarrassing one. Surely, no one would hesitate to make a diagnosis of typhoid fever in a case in which all of the symptoms were present excepting the eruption. I append herewith a series of observations that cannot be without interest.

On December 1st I was called to see a girl seven years old, whom I found in light, restless sleep, with twitching of the muscles of the extremities. The pulse was 140 and became accelerated as she awoke. The temperature was 101.8° F. The tongue was covered with a thin, moist, white coating, except for a quarter of an inch at the edges, which were red and slightly swollen; scattered over the white surface, within a quarter of an inch of one another, were small, red, swollen points that gave the tongue a characteristic "strawberry" appearance. The throat, including the tonsils, arches, uvula, and, to some extent, the posterior wall of the pharynx, was swollen. Pain in the throat was only complained of in swallowing solid food. There was slight tenderness of the submaxillary glands. The appetite was impaired, but there was annoying thirst.

The history given by the mother was that the child was well until called from her play to supper, when she ate a light meal, and became apparently very ill at eight o'clock, an hour after which I saw her. Suspecting scarlatina, I gave precautionary instructions awaiting the development of the rash. A few points of redness appeared about the neck on the morning of the second day, but not enough to be characteristic.

On December 12th I saw Mrs. F., who presented phenomena similar to those observed in the preceding case, except that there was no glandular enlargement.

Between December 12th and January 15th I saw sixteen cases (five in adults and eleven in children) presenting similar symptoms, varying only in minor points.

In five of the cases, the glands were neither swollen nor tender. Three complained of soreness of the throat. In two children, vomiting was added to the nervous symptoms. In two of the adults, nervous phenomena were absent.

In all of the children, the pulse frequently ranged between 140 and 148; in one of the adults, it reached 140; in the others, it was between 130 and 134. In all of the cases the temperature was between 101.8° and 102 4° F.

In none of the cases, excepting the first two, was there anything that even resembled the rash of scarlatina.

I was forced to make a diagnosis of mild scarlatina "by exclusion," the verification of which has in some measure been made by the sequelæ.

In one child diarrhea appeared early in the second week. From the knowledge of most careful nursing in the case, I feel confident in considering the diarrhea as a sequel of the previous disease.

In two cases troublesome bronchitis appeared after the more active febrile symptoms of invasion had disappeared.

In two cases, after careless exposure, the swelling of the submaxillary glands returned, with slight elevation of temperature and acceleration of pulse.

In two cases desquamation took place, not extensively, but indubitably.

One of the adults, Mrs. C., on December 20th gave birth to a girl baby; the labor lasted seven hours, and for four days convalescence progressed without a complication. On the morning of the fifth day I found the woman presenting the train of symptoms and signs described, and, in addition, sore-throat, repeated swelling of the submaxillary glands, edema of the feet and legs, and ultimately a clearly defined attack of puerperal fever with localized peritonitis.

My medical colleagues do not concur in my diagnosis, in support of the correctness of which I present the following reasons:

The epidemic character of the disease: eighteen cases occurred in my own practice and there were four others of which I have information, in a community numbering not over five hundred souls in all.

Its contagious character: the disease ran through three families, and in four of the cases, in as many different families, it was possible to trace contact with the families in which the disease was prevalent.

The unusual similarity of the symptoms in all of the cases, presenting so many of the lesions of scarlatina, notwithstanding the absence of the rash.

The corroborative evidence found in the sequelæ.

MEDICAL PROGRESS.

Secondary Miliary Tuberculous Arthritis. — NICAISE (*Revue de Chirurgie*, 1891, No. 12, p. 1115) has recorded the case of a man fifty-six years old, whose health had been failing for about a year. Pains in the lower extremities had compelled him to take to his bed. Shortly after, the pain localized itself at the right knee, which soon became tumid; fluid collected in the joint. Movement at the knee developed crepitus. The thigh was atrophied. The second phalanx of the right ring-finger presented evidences of a past osteitis. Nothing abnormal was detected in the lungs; there was neither cough nor expectoration. Fungous arthritis being diagnosticated, the extremity was immobilized in a fenestrated silicate dressing, and vesicants and pressure applied to the joint, in conjunction with the administration of cod-liver oil and tonics. The condition of the knee improved, but the general condition of the patient, however, failed to participate in the improvement. On the contrary, the man lost appetite, and diminished in weight;

abdominal pains developed, without diarrhea; irregular cough set in, without expectoration; some moist râles could be heard in the left lung. Cerebral symptoms and elevation of temperature appeared. Progressive aggravation of the symptoms was followed by death. At the autopsy, only the lungs and the knee were examined. Both lungs contained many confluent miliary tuberculous granulations, especially at the apices, with no tendency to softening or cavitation or suppuration. The tissues of the knee-joint were thickened. The cavity of the joint contained an excess of fluid. The synovial membrane was the seat of numerous miliary granulations. The cartilages were softened and undergoing destruction. In the anterior wall of the articulation was a small caseous mass. In the tibia, at a point corresponding with the situation of this mass, were the evidences of a fungous osteitis. Miliary granulations were also found in the medulla of the femur. It is thought that the primary lesion was a simple fungous arthritis, to which subsequently a general tuberculosis was superadded.

Rupture of an Aortic Valve from Physical Exertion.—TRETZEL (*Berliner klin. Wochenschrift*, 1891, No. 44, p. 1073) has recorded the case of a large, muscular, hearty man, forty-one years old, who, while pushing a heavy cart, felt a severe pain in the chest. In the course of the day both the man and his wife observed a purring sound that emanated from the man's chest, and that occurred with the regularity of the pulse. Except for oppression of the chest and disturbance of sleep, the general condition was unaffected. On examination, a murmur could be heard at a distance of two or three yards from the patient, and it was observed that the sound was produced subsequently to the occurrence of the apex-beat. On palpation of the precordium, a tremor could be felt. Pulsation was detected in the epigastric region, in the carotids, and in the peripheral vessels. The area of cardiac percussion-dulness was already increased. On auscultation, a loud diastolic murmur was heard at and to the right of mid-sternum. A diagnosis of aortic insufficiency, from rupture of a valve leaflet, was made. The patient was lost sight of for two years, when he was found cyanotic and anasarcous. The heart had become enormously enlarged. Its action was frequent and feeble. The diastolic murmur was not as loud as it had been at first, and could no longer be heard at a distance from the chest. While under observation, the patient died suddenly. At the autopsy the heart was found to be immensely dilated and hypertrophied. The first part of the aorta was dilated. The aortic orifice was incompetent. The right leaflet at its anterior portion was torn from its attachment, and floated free in the opening. A linear cicatrix occupied the site of attachment of the valve. The remaining valves and orifices were normal.

The Toxicity of the Urine in Diseases of the Liver.—From a study of one hundred cases, SURMONT (*La Semaine Mèdicale*, 1892, No. 4, p. 25) has found that the toxicity of the urine undergoes changes in connection with diseases of the liver. It is augmented in atrophic alcoholic cirrhosis, in tuberculosis of the liver, in extensive and nodular carcinoma, in some forms of obstinate icterus, and sometimes in hypertrophic biliary cirrhosis. It remains normal or is diminished in hypertrophic alcoholic cirrhosis, in obstructive disease of the heart, and in certain periods in hypertrophic biliary cirrhosis. In infectious jaundice, catarrhal or grave, the toxicity of the urine remains normal or is diminished at the height of the attack, but increases with its decline. The toxicity of the urine remains normal or is augmented as the hepatic cells are normal or altered, either in structure or in function. When the toxicity of the urine is augmented a milk diet and intestinal antisepsis are rigorously indicated.

Carcinoma of the Stomach.—As a result of a study made at the clinic of Lépine, at Lyons, MOUISSET (*Revue de Mèdecine*, 1891, No. 10) has found that the blood of patients with carcinoma of the stomach suffers as decided a diminution in the proportion of hemoglobin as in the case of chlorosis. This knowledge constitutes a valuable point in differential diagnosis, especially between carcinoma of the stomach and pernicious anemia. In the former, the proportion of hemoglobin is decidedly diminished; in the latter, the proportion is normal or increased.

Of twelve hundred deaths from all causes, sixty-one were found to be due to carcinoma of the stomach, and in twelve of these pulmonary tuberculosis was found associated.

Lysol in the Treatment of Aural Affections.—HAUG (*Journal de Mèdecine de Paris*, iv, 2, 1892, p. 13) recommends irrigation with a centesimal solution of lysol in the treatment of otorrhea. In case of coëxisting inflammation of the meatus and tympanic membrane, the irrigation is preceded by instillation of few drops of a solution of forty-eight grains of cocaine hydrochlorate in a half-ounce each of distilled water and alcohol. In case of otomycosis several drops of a solution of twenty grains of lysol to an ounce of alcohol are introduced into the auditory meatus twice daily, and permitted to remain for ten minutes. As a dressing, gauze impregnated with a solution of from ten to twenty grains of lysol in half an once of distilled water and two drams each of glycerin and alcohol may be employed.

Cranial Auscultation.—RICHARDSON (*Asclepiad*, 1891, viii, 32) records several cases of vertigo and noises in the ear or cranium, alone or associated, in which, upon the application of the stethoscope to various parts of the head, murmurs could be heard, in some instances dependent upon valvular lesions of the heart, in others probably upon aneurism, and in still others probably upon roughening of the intima of the arteries. Local treatment is likely to do harm. The constitutional treatment will depend upon the underlying condition. The best sedative is a combination of dilute hydrobromic acid, from fifteen to twenty minims; infusion of digitalis, half a fluidounce; and distilled water, sufficient to make an ounce and a half as a dose.

A Case of Anthrax Cured by Excision and the Employment of Ipecacuanha.—DAVIES-COLLEY (*Lancet*, No. 3555, p. 872) has reported the case of a horse-slaughterer, in which, after a scratch upon the left side of the face, swelling and induration developed, involving the eye-

lids and the cheek, and extending to the subclavicular region. A slough formed, in the serum of which anthrax-bacilli were found. A disc of skin was excised from the focus of infection, and the wound was covered with powdered ipecacuanha. Five grains of ipecacuanha, with one-sixth of a grain of morphine, were administered every four hours. For three days the condition grew worse, but subsequently improvement set in and gradually progressed to recovery.

Movable Kidney and Hydronephrosis.—LUCAS (*British Medical Journal*, No. 1617, p. 1343) maintains that movable kidney is a condition that, during displacement, may, and often does, lead to hydronephrosis and subsequent destruction of the kidney, in consequence of twisting of the pedicle, or pressure of the organ upon the ureter. To avoid this danger, and to relieve the patient of pain, he recommends nephrorrhaphy. Even when hydronephrosis has become pronounced, relief may be afforded by nephrorrhaphy, and further degenerative change prevented. Three cases are reported, in two of which nephrorrhaphy was performed; in one, nephrectomy was performed; in one, operation was declined.

The Pathology of Paralysis Agitans.—BORGHERINI (*Rivist. sper. di Freniatria e Med. leg.*, 1891, vol. xvii, fasc. 1, 2) has reported a case of paralysis agitans, in which after death, on careful microscopic examination, an excessive formation of connective tissue was found in various parts of the cerebro-spinal nervous system, with pigmentation and atrophy of gray matter and ganglion cells. The walls of the capillaries were thickened, the lumen of the vessels was increased, and the perivascular lymph-spaces were dilated. In many places miliary aneurisms were present. The lesions are thus those of senile involution.—*La Médecine Moderne*, 1891, No. 43, p. 746.

The Suture of Nerves.—At a meeting of the Berlin Medical Society, GLUCK (*Deutsche med. Wochenschr.*, 1891, No. 46, p. 1273) presented a man twenty-two years of age who, following a punctured wound of the arm, developed complete radial palsy. Enlarging the wound, it was found that the musculo spiral nerve had been divided. The proximal and distal extremities were carefully sutured and the wound was closed. At the expiration of a month, electric treatment was instituted. At the expiration of five months, reactions of degeneration were still present, but power of movement was beginning to return. A favorable prognosis was expressed.

Fatal Hemorrhage from Scarification of the Conjunctiva.—SHIRLEY (*New York Medical Journal*, 1892, lv, 1, p. 15) has recorded the case of a mulatto infant, six weeks old, with hereditary syphilis, in which fatal hemorrhage followed scarification of the palpebral conjunctiva for purulent conjunctivitis. Hot water, ice, and styptics failing to restrain the hemorrhage, sutures were passed beneath the bleeding surfaces and the upper and lower lids were united. The hemorrhage was controlled, but the child died.

Cresol-iodide.—SZOLDRSKI (*Münchener med. Wochenschr.*, 1891, No. 43, p. 753) has employed local applications of cresol-iodide in various acute and chronic affections of the nares and larynx. While exerting no direct influence upon the pathological process, the agent proved specially useful in checking excessive secretion. It also acted beneficially when applied as a disinfectant after operations in the nares and larynx. Over iodoform cresol-iodide has the advantage of being inodorous.

Purpura of the Mucous Membrane of the Mouth, Pharynx, and Larynx.—AUDUBERT (*Annales de la Policlinique de Bordeaux*, 1891, No 5) has recorded the case of a man, fifty years old, with tuberculosis of the larynx and lungs, in the course of which purpuric spots appeared upon the uvula, the tongue, the gums, and in the larynx and pharynx, but nowhere upon the skin or in the nares.—*Wiener klin. Wochenschr.*, 1891, No. 43, p. 813.

The Treatment of Anthrax and Analogous Conditions.—By experiments upon animals and by clinical observations in man, NISSEN (*Deutsche med. Wochenschr.*, 1891, No. 53, p. 1425) has been able to demonstrate that the immediate application of an elastic ligature to the proximal side of a wound infected by anthrax, together with a thorough cauterization of the wound, will prevent the development of anthrax. Either procedure alone will not suffice. Nissen suggests the application of the principle to be deduced to the early treatment of other infections introduced through the medium of the lymphatic system.

Benzosol as a Substitute for Creasote.—To some tuberculous patients the odor and taste of creasote are extremely unpleasant, and in some the administration of the remedy in suitable doses gives rise to impairment of appetite and derangement of digestion. Guaiacol, the active constituent of creasote, is open to similar objections. The most recent substitute proposed consists of a combination of guaiacol and benzoic acid (the proportions are not stated), designated benzosol. HUGHES (*Deutsche med. Wochenschr.*, 1891, No. 53, p. 1435) has employed benzosol in a series of twenty cases of pulmonary tuberculosis, with highly gratifying results. Appetite returned, cough diminished, the subjective condition improved, and there was increase in weight. Benzosol is a white powder that may be administered thrice daily, after meals, in doses of three grains, made into troches, with the addition of a twelfth of a minim or more of oil of peppermint. For a week, three troches may be given daily; then for three weeks, six troches daily; for the next week, three troches daily; in the sixth week the administration is intermitted, to be recommenced in the seventh.

Tuberculosis in the Goat.—It has been maintained that goats possess immunity from tuberculosis. At a meeting of the French Academy of Medicine, COLIN reported the development of tuberculosis in a goat that had been inoculated with tuberculous tissue obtained from a cow. The goat died two months after the inoculation, presenting tuberculous involvement of the lymphatic glands and of the lungs.—*Deutsche med. Wochenschr.*, 1891, No. 53, p. 1436.

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DUTIES OF THE ELDER PRACTITIONER.

WITH his practice established, his position assured, or quite as much so as may be expected, what are the duties of the elder to the younger practitioner? The latter, by the fact of his coming, asserts his right to a place, and, in a certain sense, lays claim to a sharing of the work of the elder. Shall the claim be allowed by cordiality of reception, or be disallowed by secret opposition and neglect? It would seem that the question were needless, in view of the tradition of ethics that has long been the pride of our profession, and the large humanitarianism that, from the earliest times, has characterized the medical guild. Envy is an unworthy motive and especially so with physicians. The object of their life-work does not warrant such selfish indulgence. Whether willingly or unwillingly, whether sooner or later, the younger must take the place of the elder; better the passing of the torch by consent and good-will than by wresting and ill-will.

Instead of an individualism and struggle for personal place, it harmonizes with ideals of professional success to cultivate a desirable *esprit de corps*, or common unity. The work of the elders should be directed to preventing the entrance into the profession of the unworthy and unfitted, rather than embittering the lives of those allowed admission. Let the standard of medical education, the preliminary and final examinations, be made more stringent, and the lengths of college courses be increased, etc., so far as wished, but the theoretic right to practise as authorized by the conferred degree should be followed by the practical welcome from those longer in the work.

In the choice among many younger competitors the "practical welcome" should, of course, be conditioned upon character. When self-assertion and the outcropping of low ethical standards, incompetence, etc., are manifest, neglect is certainly justifiable. But when deference, capacity, and personal honor are evident in the younger men, the welcome should be clear and frank. What are a few of the prosaic and practical methods of effecting this welcome?

1. By encouraging the habit of frequent consultations in severe or puzzling cases of illness, and by lessening the obstacles in the way of such consultations. The proposal or possibility of these consultations is often shut out by the knowledge of the high fee of the consultant. Why should the charge be disproportionately higher in consultation cases than in others?

2. By summary and effective measures to stop the deplorable abuse of medical charity by rival hospitals and dispensaries. Efforts to this end apparently meet a horrible dead-wall of indifference on the part of older men. It is, indeed, they that usually keep up and increase the abuse. It is a crying injustice to the younger professional men. It must be stopped, both for the sake of the public and for the sake of the profession, being injurious alike to both. The remedy lies in the hands of the older members of the profession alone.

3. By making the bestowal of hospital and subordinate teaching positions sought by the younger dependent upon character and medical attainment, not upon scheming and "private pulls." Anyone that has once seen the inside wire-pullings, the filthiness of medical politics displayed in a scramble for place, realizes how nearly the methods of the ward politician are adopted in the allotment of these official positions. It is quite certain that often the worst men succeed, not the best. The most brazen impudence and flashy capacities make the most noise; the modest and self-respecting shrink from the self-advertisement and the importunities of friends that the schemer delights in, and the

schemer is preferred. Boards of trustees of colleges or hospitals should be guided by the wisdom of elder physicians and should reject the wire-puller, if for no other reason than that he is a politician. Character and honest competitive examination should go for more than "influence." Capacity is not usually associated with conceit, and when the man seeks the office with egotistic pertinacity it is, *per se*, pretty sure proof that he is unworthy. Let the office seek the man!

4. By the formation of local medical societies and guiding them toward scientific usefulness, and by upholding ethical standards and practices. Of prime importance and great service would be the society medical library, where great works of reference, a wide variety of medical journals, etc., could supplement the private library. How rare is this in any but the largest cities, and yet it is precisely the country and village practitioner that most needs such helps. The difficulty experienced in getting together men so busy and so scattered should be overcome by unwearying endeavor, supported by the knowledge that association, essay-reading, reports of cases, etc., the friction of mind upon mind, leads to professional results doubly repaying the trouble. Such active, local, suburban societies would help further the very desirable but sadly-neglected practice of lecture-giving by invited visiting physicians and specialists. Why not apply "university extension" to medicine, and make an organized system of addresses a part of the year's work of county medical societies? But perhaps the greatest good of such societies is to prevent the ethical degradation that has to be guarded against with jealous care. It is the elder men that having learned by tradition and experience the fatuity and falsity of the maxim, *Medicine is a business*, should pass the tradition on and down to the younger, who are often sadly prone to accept the new creed. An illustration has lately occurred in a small neighboring city. A quack, whose patient's ingravescence was landing him in an unenviable position, wished the moral support of a consultation, and secured the help of a young physician solicitous of practice and indifferent to the code. The discipline of the harmonious medical society, rallied by the old president, taught the boy a needed and lasting lesson.

5. Against the itch of advertising in the lay press the older men should exercise the most stringent guard. Firstly, as to themselves, or else they cannot blame the younger. They well know the means whereby the "great cure" and the "great operation" get into the papers. It is rarely without authorization, as it is the experience of those who do not wish to be quoted that reporters do not go against the expressed will of a physician. Sometimes the elder lets the unauthorized puff go, from indifference or secret love of it; and then the younger, "taking fire" from bad example, steps clean over the traces, gives the ubiquitous reporter *carte blanche*, and the elder cannot then control the younger. His hands are palsied by his secret sin.

6. It is the same story with the wretched habit of signing commendatory notices of certain drug, food, or proprietary preparations. When the dishonest younger man goes into service, receives actual pay for his labor in behalf of some pharmaceutical firm, he has the cutting excuse that every nostrum advertisement he receives contains the praises of a thousand old physicians, perhaps wheedled out of them by the shrewd agent, but possibly given only for value received. Let there be no copartnerships, secret or open, of medical men with manufacturing tradesmen!

In these and many other ways the older men can advance the interests of medical science, fraternize and unify the members into a compact body more powerful for self-help and for public beneficence. It is too prevalent a habit for the elders to retire, either in weariness or in indifference, from the actual work just indicated, with the thought: "I am secure, let the youngsters work it out as they please." But they know in their hearts that it is not right—that it is shirking the most obvious of obligations.

THE CURABILITY OF TUBERCULOSIS.

THE day has passed when the thinking and observant longer have any doubt as to the curability of tuberculosis. It seems almost superfluous to dwell upon the proposition, but it may serve a useful purpose to call the attention of the busy medical practitioner and of the community to its truth and importance. Many a battle has been gained that otherwise might have been lost, when discipline has supplanted demoralization. If the patient can be made to believe that the disease with which he suffers is curable, the therapeutist will find his task the easier; and if the patient can be made to realize that recovery is the more likely the earlier

treatment is begun, the prognosis becomes still more hopeful. In this connection the *Seventh Annual Report of the Adirondack Cottage Sanitarium* is especially valuable. Of seventy-seven patients dismissed, fourteen were apparently cured; in twenty-three the disease was arrested; and twenty-two cases were improved. Can more convincing argument be presented?

It would be tiresome here to detail the treatment of tuberculosis. Each case is a law unto itself. With a proper regard for the etiologic part played by microörganisms in the drama of disease, let us not mistake the cause for the effect—the organism is not the disease. Living as we do in the midst of myriads of disease-producing agencies, existence would be but a series of infections were it not for some kind barrier placed between us and disease. Something more than seed is necessary for vegetable development: not less important is soil. So in the treatment as in the prophylaxis of tuberculosis, it is the constitution and not the germ that requires attention. The principles that should govern the treatment in any case are dependent upon the maintenance of functional activity. The quality of the blood should be improved by good, nutritious food discriminatively administered, by the removal of excrementitious products by the emunctories—skin, kidneys, lungs, bowels—and a proper equilibrium be established between waste and repair. When indicated, the surgical axiom of removal of an accessible source of irritation, when removal is not attended with greater dangers than non-interference, will find application.

MEDICAL DOGMAS.

IT is too much to expect that superstition will ever be eradicated from our common life. We scoff at the delusions of our ancestors, failing to see our own illogicalities. Medicine is not entirely exempt from the common failing. It was a long time before we were willing to believe that the arteries did not contain air. Two centuries elapsed before the germ-theory of disease was accepted. It took many years to overcome the belief that malignant neoplasms depended upon the circulation of humors or noxæ in the blood. There are not a few that today maintain that valvular disease of the heart (especially mitral incompetency) and pulmonary tuberculosis do not coëxist; that carcinoma and pulmonary tuberculosis do not occur in the same person. There are many sources of error in such theories. The possibility of error is reduced to a minimum by objective study, by observation. Who that has looked has not seen associated the conditions that it has long been taught are not associated. There are few things of which one can say that they cannot be.

In a study of twelve hundred autopsies at the clinic of Lépine, at Lyon, MOUISSET (*Revue de Médecine*, 1891, No. 10) found that there were sixty-one cases of carcinoma of the stomach, in twelve of which pulmonary tuberculosis coëxisted. Such evidence constitutes a rebuke to dogmatism and prejudice. It could not be shaken by libraries of negative testimony. Can any argument be more conclusive?

THE NECESSITY OF STATE MEDICAL EXAMINATIONS.

THE salutary effects of State medical examinations are forcibly illustrated in the report of the Medical Examining Board of the State of Washington. Of thirty applications for authority to engage in the practice of medicine, fifteen were rejected. The questions asked were of such a nature that only the incompetent could fail of the requisite average. The report is but a repetition of like reports that have emanated from other States. As a result of restrictive medical legislation, not only is the number of successful applicants reduced, but the actual number of original applicants is also diminished. It is the imperative duty of the State to afford the community adequate protection from the devices and intrigues of quacks and adventurers, with whom reputable men and women cannot compete.

REVIEWS.

REPORT ON CHOLERA IN EUROPE AND INDIA. By EDWARD O. SHAKESPEARE, A.M., M.D., Ph.D., of Philadelphia, United States Commissioner. 4to. pp. xxv, 925. Washington: Government Printing Office, 1890.

THIS bulky volume, representing an enormous amount of labor and much patient research, gives the results of the investigations undertaken by Dr. Shakespeare in pursuance of the executive order of the President of the United States, which directed him "to proceed under the direction of the Secretary of State to Spain and such other countries of Europe where the cholera exists, and make investigation of the cause, progress, and proper prevention and cure of the said disease." Upon Dr. Shakespeare's arrival in Europe, early in 1885, pursuant to this commission, he found that the cholera was rapidly vanishing from that continent, and learned that

the field for most active observation was to be found in Palermo, the principal city of the island of Sicily. After equipping himself with a travelling laboratory, purchased in Berlin, and familiarizing himself in that city with the characteristics of the comma bacillus of Koch, he went to Palermo and began his work. After the epidemic was ended at Palermo he turned to Spain, gaining information relating to the ravages of the epidemic in Italy, traversed *en route*. He arrived in Barcelona early in January, 1886, and found that the cholera had virtually disappeared from the kingdom of Spain; but because of the great extent and severity of the Spanish epidemic of 1885, as well as on account of the very large number of so-called anti-choleraic inoculations which had been practised by Dr. Jaime Ferrán and his assistants, he was of the opinion that the course of the cholera in Spain presented the best opportunity of making as thorough a study of the disease as was in his power. He visited many towns in nearly every province of Spain where cholera had spread widely, endeavoring to obtain by personal contact with the inhabitants, of high and low station and intelligence, a fundamental knowledge of the circumstances of life, manners and customs, and hygienic conditions, general and individual, which might bear upon the manner of introduction and spread of cholera among them. Especial attention was given to the matter of water-supply and the disposition of household offal. In the round of this personal observation he encountered and spent some time in the midst of a quite severe epidemic, during the month of February, in the ancient walled town of Tarifa, on the northern shore of the Strait of Gibraltar. In addition, he obtained from official sources a careful analysis of numerous and important data concerning the epidemic and the hygienic conditions in upwards of five hundred cholera-stricken towns. Before receiving this, he had undertaken a similar investigation, the results of which were added to and analyzed with the above-mentioned official documents of the Spanish Government. He has also obtained and placed in his report official statistics and documents relating to the anti-choleraic inoculations in Spain. After leaving Spain in April, 1886, authority was requested and obtained to proceed to India, for the purpose of prosecuting researches in the native home of cholera. Serious illness, due to the prostrating influences of the summer climate, prevented him from entirely carrying out his purpose, but he was able to take some observations in the city and suburbs of Calcutta. The report contains 105 illustrations, most of which were made by the author himself; among them 40 photo-micrographs, all but 6 of them being made by Dr. Shakespeare, who was obliged to acquire the art of photography, because he could get no one to do this troublesome work. Numerous analytical charts and tables relating to cholera statistics have been incorporated. There is a full table of contents and a cross index, which will considerably facilitate reference. The work of foreign investigation, continuing one year, and the labor of supervision of the printing of the report, lasting four years, have all been entirely without pay for personal services, and the profession and the country certainly owe Dr. Shakespeare a debt of gratitude for his arduous, patient and successful labors.

The report is exhaustive: the course of the last widespread epidemic of cholera is traced in detail, and, in addition, we have comparative statistics of previous epidemics in a number of the localities studied.

The last epidemic of cholera in Europe cost France 15,000 inhabitants; Spain, 180,000 inhabitants; Austria-Hungary, 4000 inhabitants; Italy, about 50,000 inhabitants; Malta, 500 inhabitants—the sum total of mortality being approximately 250,000 human beings. Estimated from a merely material point of view, this shows a sum-total of about 400,000,000 francs of value destroyed; and still greater losses resulting from the damage caused by the disease through idleness, interference with commerce and navigation, interruption of business, and the like, would increase the sum-total of the loss occasioned by the cholera to about a billion of francs in three or four years.

The hygienic surroundings, sanitary conditions, and other circumstances bearing upon the rooting of cholera in various places, whither its seeds are carried, have been carefully studied, and especial attention paid to elucidating the method of its transmission from place to place.

This subject occupies 370 pages. Some seventy-odd pages are next devoted to the "Topography and Demography of British East India in Relation to Cholera."

Bacteriologic investigations and literature occupy more than two hundred of the closely printed quarto pages. A chapter is given to the etiology of cholera and its differential diagnosis from malaria. Immunity and preventive inoculations are each given a chapter. Another chapter deals with measures of prevention, general and individual, and the eighth and last chapter summarizes the etiology and pathology, diagnosis, prognosis, and treatment of the disease.

Dr. Shakespeare's experience, together with his study of the literature of the subject, forces him to admit that the claim made by Koch must be regarded as established, namely, that the presence of Koch's comma bacillus in the alvine evacuations or the intestinal contents or vomit of an individual suffering with a suspicious attack, furnishes a ready, safe, and reliable means of diagnosis of Asiatic cholera. He also confirms in every particular the pathogenic power of the comma bacillus affirmed by Koch. He believes that the exceedingly few adverse reports, when not invalidated by retraction of the authors upon subsequent experimentation, can be explained by the fact that the comma bacillus in artificial culture often rapidly loses its pathogenic power. Dr. Shakespeare is also inclined to admit the claims of Ferrán as to the preventive value of inoculations with a special culture of the comma bacillus, and he believes this to be a complementary proof of the correctness of the claims of Koch, that this comma bacillus is the specific active cause of Asiatic cholera.

Apropos of the Ferrán inoculations, Dr. Shakespeare says that having received unfavorable impressions of Ferrán from what had been published concerning him by the medical and secular press throughout the world, and having been advised by numerous physicians and investigators in London and Berlin, for whose opinions he entertained the highest respect, that a personal investigation of the subject was now beneath the dignity of serious scientific consideration, he was little disposed,

except by a sense of duty, to give himself any trouble in the matter. But besides the impulse of duty, he was stimulated to look into the character and accomplishments of Ferrán and the value of his work by a visitor who called on the morning of his arrival in the city of Valencia. This gentleman was a certain Dr. Jelly, a man apparently of some seventy years of age, who appeared to be strongly convinced of his own consequence. He desired to set Dr. Shakespeare right on the Ferrán question before the latter had wasted any time in personal investigation relating thereto. This gentleman having been the author of a mass of unfavorable correspondence concerning Ferrán in the British medical journals, Dr. Shakespeare was now able to judge for himself of the importance and reliability which should be attributed to those articles, and in the course of the interview soon became convinced by the manner and language of Dr. Jelly, that not only was this gentleman perfectly incompetent to furnish any judicious opinion concerning questions involving an intimate knowledge of modern ideas relating to general pathology or to microscopical investigations, but also that what opinions he might form were likely to be influenced and warped by the most bitter prejudice. The interview convinced him that while he had the opportunity he should personally go to the bottom of the whole Ferrán question, if possible. Quite different was the impression made upon him by Dr. Ferrán. His laboratory was certainly unpretentious, but it had a good modern microscope, and Dr. Ferrán himself was found to be perfectly competent in the question of technique. Honesty and a regard for fair-dealing require the author to say that if anywhere in Europe there are more beautifully stained microscopic preparations than those made by Dr. Ferrán, he has never seen them. Prepared to find the characteristics of a charlatan in the man himself, he found him to be a quiet, reserved, courteous, intelligent, and generally well-informed physician. The impressions formed of his theoretic knowledge of bacteria and of the modern methods of research in the field of natural history compared very favorably with those of most of the leading bacteriologists with whom the author came in contact. He therefore left Tortosa with a very different opinion of the characteristics of Dr. Ferrán from that he had entertained when entering that city.

Dr. Shakespeare cites data from official statistics that have been collected and published since the visit to Spain of the French Commission, which made an adverse report upon Ferrán's procedure. These statistics are signed, in the first place, by the physicians of the locality; in the next place, by the judge of the municipal court; sometimes, also, by the president-judge of the judicial district, by the parochial priest, and by the mayor of the municipality, whose signatures and seals are attested by an authorized notary public. From these statistics it appears that in the Province of Valencia there were, among the villages, inhabited by a population of 50,000, 62 attacks per thousand and 31 deaths per thousand, a mortality of 50 per cent. of those attacked. In twenty-two towns in which inoculation was practised, the inhabitants were divided as follows: 104,561 not inoculated, 30,491 inoculated. Of the latter, there were 387 attacks of cholera, or 12 per cent., and 104 deaths, or 3 per cent., the mortality of those attacked being 27 per cent. Of the former, there were 8406 attacks, or 79 per cent., and 3512 deaths, or 33 per cent., being a mortality of those attacked of 43 per cent. It appears, therefore, that among the population of villages in which anti-choleraic inoculations had been more or less extensively made, the liability of the inoculated to attacks of cholera was 6.06 times less than that of the non-inoculated, whilst the liability of the inoculated to death by cholera was 9.87 times less than that of the non-inoculated. Still another result of the preventive inoculations apparently shown by these statistics, is a marked shortening of the course of the epidemic after a large percentage of the inhabitants had been inoculated. Dr. Shakespeare believes, therefore, that the method of Ferrán, besides giving the subject inoculated considerable immunity from attack and death, furnishes a means of bringing an epidemic rapidly to an end. "The cholera vaccine" is nothing more than a pure culture in bouillon of the comma bacillus.

Dr. Shakespeare is an ardent advocate of efficient quarantine by land and by sea. Admitting the frequent insufficiency of quarantine, he insists that there is a great difference between insufficency and uselessness. In addition, he advises isolation of the quarantined sick in groups of patients. He considers the present methods of independent quarantine, provided and regulated by seaboard States or cities, as especially defective and insufficient for the exclusion from the United States of the diseases against which quarantine is directed; that "it is impossible adequately to protect the public health of the country against the importation of epidemic diseases by independent local maritime quarantine establishments," and that, therefore, a national system of maritime quarantine is necessary. Concerning general measures of prevention, he advocates speedy isolation of the sick, absolute and rapid destruction of the infectious agents of the disease, not only in the dejecta and vomit, but also in clothing, bedding, and in or upon whatever it lies and finds a resting-place.

Convalescents should remain isolated from the healthy so long as their stools contain any of the infectious agent, say from ten to fourteen days; and before mingling again with the well, they should be thoroughly washed and cleansed in a disinfecting bath, and afterward be clothed from the skin outward with perfectly clean vestments that cannot possibly contain any of the infectious material. Proper precautions should be taken as to the disposal of the dead, and those handling the sick or the dead should be careful to disinfect their hands and clothing at once. Careful directions are given for the management of quarantine stations, and the measures of prevention there to be carried out.

The subject of prophylaxis, individual and general, is elaborately studied. Differential diagnosis is summarily treated. The treatment advocated is that found in the approved text-books, with the addition of "hypodermoclysis" and "enteroclysis;" the former being carried out with a solution composed of pure sodium chloride, eighty grams, sodium carbonate, six grams, in two liters of boiled water, of which from one to two-and-a-half liters are injected each time; the latter with tannin and laudanum. Both of these methods were introduced by Cantani, of Naples, and used with great confidence by him and other Italian physicians. Dr. Shakespeare

is seemingly unaware that Cantani was long antedated by Benjamin Ward Richardson, who saved many patients from choleraic collapse by injections of hot water or hot milk into the peritoneal sac, and in one fatal case produced repeated temporary revival by subcutaneous injection of a warm solution of sodium chloride.

The only and very mild fault-finding we have to make concerning Dr. Shakespeare's report is that it might possibly have been better arranged for consecutive study; but with the vast amount of material that the author had to manipulate, he has certainly done wonderfully well, even in this respect.

A SYSTEM OF PRACTICAL THERAPEUTICS. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Assisted by WALTER CHRYSTIE, M.D., late Physician to St. Clement's Hospital, and Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. I. General Therapeutic Considerations; Prescription-writing; Remedial Measures other than Drugs; Preventive Medicine; Diathetic Diseases and Diseases of Nutrition. With illustrations. 8vo, pp. 1052. Philadelphia: Lea Brothers & Co., 1891.

ANY doubt as to the necessity for a new work on therapeutics will be dissipated by a reference to this system, which will create for itself a permanent position in medical literature. Here are brought together the deliberate opinions and the mature results of the experience of men skilled in their respective departments, while the literature of the world has been liberally drawn upon. The limits of the ordinary review will only permit of passing reference to the different articles, as each in itself is a monograph, while several constitute treatises. Under "General Therapeutic Considerations," Horatio C. Wood outlines with characteristic precision and force the principles of therapeusis, with the indications for their application. In "Prescription-writing and the Combination of Drugs," Joseph P. Remington presents a good deal of useful information that will be gratefully appreciated by the careful and intelligent practitioner. In the section on "Remedial Measures Other than Drugs," A. D. Rockwell considers "Electro-therapeutics" from a practical standpoint, indicating its applications to diseases of the nervous system, to gynecology, and to obstetrics. John K. Mitchell presents as an authoritative statement of the most recent views of Dr. S. Weir Mitchell, and of the latest developments in this method of treatment, an article on "Rest-cure for Neurasthenia and Hysteria." Benjamin Lee contributes a thorough and exhaustive paper on "Swedish Movements and Massage." Edward Mussey Hartwell fully considers the subject of "General Exercise." S. Edwin Solly discusses the various aspects of "Climate"; and Simon Baruch devotes some eighty pages to a masterly consideration of the subjects of "Hydrotheraphy" and "Mineral Springs." A gratifying feature of many, if not of most of the articles, is the consideration given to the prophylaxis of disease. There is, besides, a division of the work devoted to "Preventive Medicine," which includes articles on "General Sanitation," by Henry B. Baker; on "Disinfection," by George M. Sternberg.; on "Antisepsis and Asepsis," by J. William White; and on "Nutrition and Foods, including the Treatment of Obesity and Leanness," by J. Burney Yeo. The subject of "Diathetic Diseases and Diseases of Nutrition" is opened by a scholarly and exhaustive paper of more than two hundred pages on "Tuberculosis," by Solomon Solis-Cohen; in succession follow "Scrofulosis and Rhachitis," by Walter Chrystie; "Acute and Chronic Articular Rheumatism, Rheumatoid Arthritis, and Gout," by James Stewart; "Scurvy," by John B. Hamilton; and "Diabetes Mellitus," by Frederick A. Packard. An index of sixteen pages concludes the volume of 1052 pages.

The work reflects great credit upon contributors, editors, and publishers. It is a monument to, as it is a record of, scientific therapeutics. It should be in the library of every progressive practitioner of medicine.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, INCLUDING HISTOLOGY AND MICROSCOPICAL ANATOMY, WITH SPECIAL REFERENCE TO THE REQUIREMENTS OF PRACTICAL MEDICINE. By L. LANDOIS, M.D., Professor of Physiology and Director of the Physiological Institute, University of Greifswald. Translated from the seventh German edition. With additions by WILLIAM STIRLING, M.D., Sc.D., Blackenbury Professor of Physiology and Histology in Owens College, and Professor in the Victoria University, Manchester. With 845 illustrations, 34 in colors. Fourth edition. Philadelphia: P. Blakiston, Son & Co., 1891.

WHEN the first American edition of this text-book was published, it was predicted that it would have a large sale, not only among students of physiology, on account of its completeness as a work of physiology, but also among practitioners of medicine and surgery, on account of the numerous applications of physiology to pathology and clinical medicine. The instant and continued success that the work achieved is the best possible proof that it possesses merits far beyond the usual text-books. The first German edition appeared in 1880, the seventh in 1890; the first English edition appeared in 1885, the fourth in 1891. The rapid publication of successive editions is an indication of the favor with which it has been received by the profession of both German and English-speaking people.

With each new edition, author and English translator have endeavored to maintain a high standard of usefulness by incorporating all of the recent advances in physiologic science that appear to have permanent value, as well as facts of clinical medicine, pathology, and experimental therapeutics which reveal the connection and interdependence of all vital processes. There is no similar work in the English language that contains such an inexhaustible fund of useful information pertaining to physiology and the allied sciences. The physician and student will here find an answer to almost every question that may arise from day to day in the course of his investigations. Indeed, no working library can be said to be complete without the book.

Physiologic and chemic methods are briefly and clearly described, and the results obtained are presented in a concise and readable form. The illustrations, 845 in number, are striking and apposite, and materially assist in the elucidation of the text.

CORRESPONDENCE.

TREATMENT OF PNEUMONIA.

To the Editor of THE MEDICAL NEWS,

SIR: Many deaths have occurred from pneumonia as a sequel of influenza or *la grippe* in all parts of the civilized world, independently of geographical position or hygienic surroundings, killing alike the prince in his palace and the pauper in his hovel, and apparently in many cases not amenable to recognized rules of treatment. In view of this fact one is inclined to ask whether the opinion of Dr. Coupland, of London, in a paper on "Pneumonia" (*British Medical Journal*), in which, advocating expectancy, he states that "as regards the drug treatment of pneumonia nothing can be done," is, after all, the best advice. In spite of the great weight that must attach to the opinion of so experienced a physician, I would ask if in excluding drugs one can be said to render all the assistance possible to Nature in helping her to work out a cure. For example, when a great portion of the lung is involved, with dyspnea and cyanosis, can nothing be done? Let us consider the causes of these symptoms, which are of such grave import: there is an effusion in the pulmonary tract from the liquefaction of the blood, which causes a nonaëration of the blood; and there is also great extravasation of leucocytes, which characterizes the state of the lung-exudation when resolution has failed to take place. It is under such conditions as these that the preparations of iron are of peculiar benefit. For some unaccountable reason there seems to have been a prejudice in the minds of many practitioners against the use of iron in chest-affections, but I feel satisfied that those that try the iron-treatment in pneumonia will have no cause to regret so doing, and those that have already used it, if their experience has been like mine, will certainly continue its use. For five years I have made a practice of treating cases of pneumonia, when symptoms such as those quoted appeared, with fifteen-minim doses of the liquor ferri perchloridi, and the same amount of liq. ammon. acetatis, given every three hours. Early and brisk counter-irritation is undoubtedly one of the most important points of treatment.

The question that becomes one of practical import now is whether cases of influenza showing a tendency to chest-complications would not be best treated with some preparation of iron from the outset and thus possibly avoid the pathologic degeneration in the lung-tissue that has unfortunately been accompanied with such fatal results. It is at least a matter well worthy of the most careful consideration of the profession. It is to be hoped that some of your readers will contribute their opinions on the subject. Respectfully yours,

A. H. FRASER,
Licentiate Royal College of Physicians, Edin.
HARPER, KANSAS.

IS URIC ACID A PRIME OR SOLE FACTOR IN THE CAUSATION OF RHEUMATISM?

To the Editor of THE MEDICAL NEWS,

SIR: In an article, "The Dietetic Treatment of Some Important Neuroses" (THE MEDICAL NEWS, January 2, 1892), Dr. John Ferguson, of Toronto states that uric acid is a prime or the sole factor in producing many neuroses—epilepsy, chorea, hysteria, migraine, etc.—by its action as an irritant poison, circulating through the tissues of the body, when produced in excessive quantity—to cause an "overflow," so to speak, into the circulation.

In my experience with rheumatic affections, I have so frequently noticed this excessive formation of uric acid, as shown by an examination of the urine, that I regard it as symptomatic of a tendency to rheumatic troubles, even before the patient has the attack. Uric acid is produced in the system by a stimulating, nitrogenous diet and the use of alcoholic beverages. In the treatment of rheumatic affections we first prohibit entirely, or allow very sparingly, according to the nature of the case and the condition of our patient, an animal diet and alcoholic beverages, especially wines and beers. Next we give the saline mixtures of potassa and soda and the salicylates. Why? Because clinical experience shows such the best course to pursue.

Does not this treatment lessen the quantity of uric acid, which, by its irritating influence upon the lower-grade tissues of the body, gives rise to the rheumatic attack, consequently checking or "curing" the rheumatism? A case of sciatica, due to rheumatism, remains quiescent so long as the excretion of uric acid is normal in quantity, but as soon as the urine shows an excess, exacerbations manifest themselves, which disappear as by magic when the quantity is lessened to normal by a few doses of salicylate of soda or carbonate of lithium—washing out, as it were, the excess of uric acid from the system.

If such be the case, as clinical experience tends to show that uric acid in excess is a sole or prime factor in the causation of rheumatic affections, have we not the "key" of the trouble, whereby we may prevent a rheumatic attack in the education of our rheumatic patients to abstain from too free indulgence in an animal or nitrogenous diet and the imbibing of alcoholic beverages? Also, in the examination of their urine, as to quantity, appearance, hyperacidity, etc.; in the use of the mineral waters—Vichy, Seltzer, Carlsbad, etc.—as occasion may demand.

If such a course were universally followed, how much of the suffering of humanity might be greatly alleviated or wholly prevented! and a step made in advance in the prevention of disease.

W. E. SHOTWELL, M.D.
DENVER, COLORADO.

THE ALABAMA LAW AS TO MEDICAL EXAMINATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: I notice the following in your issue of January 16th: "The State of Alabama has passed a law requiring all physicians who are not graduates of reputable medical schools to obtain certificates of qualification from a board of medical examiners." Our law has been in operation for ten years and it requires *everyone* wishing to practise in the State to first obtain a license from "the County Board of Medical Examiners." Before being allowed an *examination* he must first show a diploma from a reputable medical college. We have also a

State Board of Examiners, to which all papers are sent for approval. Any applicant failing to pass a County Board may appear for re-examination to the State Board. No physicians in the State practise without a diploma, except a few who had been in practice for five years before the law was passed.

Very sincerely,
GEORGE S. BROWN, M.D.,
Secretary of Board of Medical Examiners.

BIRMINGHAM, ALA.

OBITUARY.

SIR MORELL MACKENZIE.

IN the fifty-fifth year of his age, this famous physician, whose phenomenal career has attracted world-wide attention, has succumbed to bronchitis, a sequel, in all probability, to an attack of the prevalent and pandemic influenza. Graduating in medicine about the time that Czeomak, of Pesth, was travelling through Europe to demonstrate the physiological and diagnostic uses of the laryngoscope, young Mackenzie recognized its usefulness in advance of all but a very few of his medical colleagues, and he cultivated its professional use with such assiduous energy as soon made him its leading exponent. Hence, when a few years ago the Crown Prince of Prussia was known to have a malignant disease of the larynx, the services of Dr. Mackenzie were solicited, and for these he was knighted at the hands of his Queen. This increased his practice and his income.

Dr. Mackenzie's charmingly written journal articles and monographs, usually rich in historic research, attracted many readers, and soon drew to his special hospital crowds of students from different countries, among them hundreds of Americans, Canadians, citizens of the United States, and residents of Central and of South America. In many a town in these United States, and in all likelihood in many other countries, the fact that an aspiring specialist announced himself as a former assistant or as a pupil of Mackenzie, was sufficient to win the confidence of many of his professional brethren. Many of the leading laryngologists of London and Great Britain to-day were at one time his favorite pupils.

Dr. Mackenzie's phenomenal success in securing patients at home and from abroad produced a good deal of jealousy on the part of a number of the more conservative practitioners of his day, and his methods a considerable amount of distrust, from the effects of which his professional repute suffered more or less during his entire career; but he continued his work in his own manner independently of disregards or of covert and open sneers.

The true inwardness of Mackenzie's course in the case of the late Emperor Frederick, may possibly be disclosed in some posthumous publication; but the fact remains that that very sensible potentate stuck to Mackenzie to the very last moment, notwithstanding the unhappy progress of his case and the consequent scornful actions and comments of the other medical attendants. Hence he must have endured and approved of Mackenzie's conduct, right or wrong.

A career of practice such as spread the name and the fame of Morell Mackenzie, even to the remoter portions of the globe, had not occurred in the previous history of medicine.

NEWS ITEMS.

The Fifth District Branch of the New York State Medical Association will hold its eighth annual meeting in Brooklyn on Tuesday, May 24, 1892. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D., P. O. Box 94, Brooklyn.

University of Pennsylvania.—The Alumni of all departments of the University of Pennsylvania will give a dinner on the evening of Saturday, February 27, 1892, at Musical Fund Hall, with the object of bringing together a large number of the graduates of the University in social intercourse in a dignified and agreeable manner. It is also designed by this reunion to inaugurate a series of triennial dinners, which will serve to mark various epochs in the life of the University.

DR. ZEOVIA OWEN-MCDADE died recently, of acute pneumonia, in Kenyon, Minn., after an illness of three days. Dr. Owen received her degree at Michigan University in 1888. After nearly a year of study in Europe she returned to this country and married a classmate, Dr. C. W. McDade, engaging in practice in Nebraska, but removing to Minnesota last summer.

BOUCHUT, the distinguished French clinician, is dead.

BOOKS AND PAMPHLETS RECEIVED.

Statistics of Railways in the United States. Third Annual Report, for the Year Ending June 30, 1890. Washington: Government Printing Office, 1891.

Seventh Annual Report of the New York Post-Graduate Hospital for the Year Ending September 15, 1891. New York, 1891.

Notes on Cephalo-metrical Measurements. By Charles H. Merz, A.M., M.D. Reprint, 1891.

Four Congenital Tumors of the Head and Spine, All Submitted to Operation. By W. W. Keen, M.D. Reprint, 1891.

Jacksonian Epilepsy; Trephining; Removal of Small Tumor and Excision of Cortex. By Charles K. Mills, M.D., and W. W. Keen, M.D. Reprint, 1891.

The Practical Details in the Treatment of Croupous Pneumonia. By Thomas J. Mays, M.D. Reprint, 1892.

Cantonale Correspondenzen. Reprint, 1891.

Nouvelles Observations concernant l'action thérapeutique de l'Ichthyol, suivi d'une note additionnelle. Tamines: Duculot-Roulin, Imprimeur-editeur, 1891.

Beitrag zur Freund'schen Ichthyolbehandlung der Frauenkrankheiten. Von Dr. Edgar Kurz, Director der chirurg. Poliklinik in Florenz. Leipzig: Verlag von Georg Thieme, 1891.

Die Behandlung des Erysipels. Von Dr. Stanislaus Klein. Reprint, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

SYSTEMATIC EXAMINATION FOR RECTAL DISEASE.[1]

BY R. H. WORTHINGTON, M.D.,
OF DENVER,
MEMBER OF THE BRITISH MEDICAL ASSOCIATION; RECTAL SURGEON TO ST. LUKE'S HOSPITAL, DENVER.

THERE is no way by which the different diseases of the rectum can be diagnosticated except by careful and thorough examination, and this in the large majority of cases can be made without the use of any instruments, and almost without pain to the patient.

When patients consult me I always encourage them to tell their own story in their own way, and usually they will give some salient points on which I can base my questions, though these points are frequently mixed up with irrelevant information.

The statement of a patient as to rectal disease may be very useful as a guide to the direction in which one should inquire further and search for lesions, but for diagnostic purposes it cannot be depended upon. In four cases out of five, the patient says he has piles. Very possiby he has. He may or may not, and he may have much more. If the surgeon simply takes the patient's word for it, and prescribes compound gall ointment, as is very frequently done, without making any examination, he has only himself to thank if his patient is not benefited, and goes to a quack for treatment. The fact of rectal disease being so largely in the hands of quacks is often because physicians habitually treat cases without a full examination, and therefore without a diagnosis, followed by a consequent failure to cure. The public has somehow got the idea that the regular profession can do little for rectal diseases, and so they naturally go to men who advertise their ability to cure. Most of the cases of carcinoma of the rectum that I have seen had been for several months treated for piles, without a digital examination having been made. Under such circumstances, failure to examine seems almost criminal.

After getting the patient's own account, I begin to question. How long has he suffered? The answer may throw much light on the case. If only *quite* recently, a thrombotic pile, abscess, or acutely inflamed internal piles that have hitherto escaped notice, may be looked for, or a recent fissure, or a polypus that has just come within the grasp of the sphincter, and that previously gave no trouble. Old internal piles may last indefinitely, as may fistulæ, though they usually tend to get worse before the patient seeks relief. Ulceration and stricture are usually of long standing, while carcinoma is, as a rule, discovered within a few months of its appearance, though its nature may not be understood until far too late for its removal with any hope of cure. Most patients put off seeking advice for rectal troubles till their condition is intolerable.

I then ask: "Is there pain?" Let the patient describe it. "Is it connected with the act of defecation?" "Is it acute, excruciating, or a dull, heavy ache?" "Is it constant or occasional?" "Where is it situated?"

The most acute pain is found in association with fissures and with ulceration situated within the grasp of the sphincter, and is aggravated or caused by defecation. A fissure may confidently be looked for when there is very acute pain always coming on with or shortly after a movement of the bowels, and lasting for half an hour or for several hours.

The pain of ulceration varies greatly according to the position of the ulcers, those situated high up being much less painful than those constantly irritated by the action of the sphincters, low down, near the anus—probably the most sensitive part of the body.

Some simple ulcers occasion but little pain, and syphilitic ulcers are, as a rule, much less painful than the tuberculous ulcers, which are probably the most painful of any, and the most difficult to cure.

Fistula may occasion much pain if the internal orifice is large and the external one small, or if the skin is much undermined; but if the external opening is large enough to allow of free drainage, and is kept open, the pain is slight.

Uncomplicated internal piles rarely give rise to much pain, unless they prolapse, when there may be considerable. Inflamed external piles and the thrombotic external piles caused by the rupture of a vein at the anal margin, cause a good deal of pain, with dull, heavy aching and throbbing, much like the pain of abscess, but less severe.

The pain of coccyodynia is spasmodic, usually attacking the patient when attempting to rise from a sitting posture. Some of these cases are purely neuralgic, while the worst ones are due to caries of

[1] Read before the Denver Medical Association and Arapahoe County Medical Society, October 13, 1891.

the coccyx, or to disease of the sacro-coccygeal articulation.

Very frequently I have examined patients who complained of pain in the rectum or about it, and who were firmly convinced that they had some rectal disease, but in whom the rectum and anus were entirely free from any discoverable lesion. In such cases the cause may usually be found in some neighboring organ, the pain being reflex. Urethral stricture, stone or tumors of the bladder, and enlarged prostate in the male, or an enlarged and misplaced uterus, with the fundus or cervix pressing abnormally on the rectum, or a prolapsed ovary, in the female, may cause these pains, as may also any pelvic tumor.

Then, again, in severe ulceration and in carcinoma of the rectum, pain is frequently felt down the legs, especially the left, and this may be the first symptom that causes the patient to seek advice. Old-standing prolapsing piles are sometimes accompanied by constant backache. A patient on whom I operated lately told me a few days after the operation that he was then free from backache for the first time in five years.

To return to our questions. Is there any bleeding? If so, is it constant or occasional, slight or profuse—or merely a streak of blood in the feces?

Internal piles are by far the commonest cause of rectal bleeeding, especially if profuse and occurring with every, or nearly every, movement of the bowels. Hemorrhage occurs also in association with carcinoma when it has reached the stage of ulceration, and with polypi, which are the usual cause of rectal hemorrhage in children. It is astonishing what an amount of blood may be lost daily from a very small pile, or a little warty polypoid growth not larger than a pea. The bleeding from non-malignant ulceration and from fissure is much less profuse—in fissure frequently merely a streak of blood in the feces. In ulceration and in some polypoid growths, there is often a discharge of dark blood, mixed with mucus, early in the morning, and in bad cases recurring at intervals during the day, while fecal discharges may be quite free from blood.

Dysentery must, of course, be remembered, and also vicarious menstruation, which occasionally, though rarely, occurs from the rectum.

Does anything protrude from the rectum during defecation? Does it return itself, or can it be returned, and if so, will it stay up?

External piles are usually described as coming down from inside the anus, but they cannot be put back and kept in. Internal piles, carcinomatous and other tumors, polypi and small polypoid growths, may all prolapse. In procidentia there may be merely a small prolapse of the mucous membrane or an immense mass protruding, in some cases as large as a child's head, and involving all the coats of the intestine. In these severe cases of procidentia, a hernia should always be looked for (it lies on the anterior aspect of the bowel), and if present is a serious complication.

The causes of procidentia must be carefully searched for. It is often due to polypus, sometimes to piles, and if so may be entirely relieved when the cause is removed. In a case I saw recently there was an epithelioma of the posterior rectal wall, which, however, was probably secondary to the procidentia and caused by the irritation of the exposed membrane.

Is there any discharge from the rectum? is another question I usually ask.

A discharge of mucus, with or without pus and blood, is pretty constant in association with ulceration, and often accompanies old internal piles. It may result from polypus and small polypoid growths, and some may be found in connection with a catarrhal condition of the colon. There is much discharge in the later stages of carcinoma, and there is some with fistula.

An exudation from and around the anus usually accompanies pruritus, and is often due to eczema. It is especially marked at night when the patient gets warm in bed, and then the itching usually becomes intense. Itching, by the way, does not always mean pruritus, but is sometimes the first premonitory symptom of the formation of an abscess, often a deep one.

I never fail to inquire about the state of the bowels. Many rectal ailments are due to constipation, and are relieved when it is overcome. It must be remembered that diarrhea may accompany an impaction of feces in the rectum or colon, and an enormous load may be found there in spite of the patient's belief that such a thing is impossible because he has had a diarrhea for a week or more.

It is often well to ask if a satisfactory movement is obtained; if the rectum seems to be emptied, or if there is something left that straining does not bring away. This symptom may be found in connection with a polypus, with an internal procidentia or partial intussusception of the rectum, or even with a pile within the grasp of the sphincter. Stricture, of course, causes a difficulty in defecation, and very similar symptoms may be due to an enlarged prostate or to a retroverted and tender uterus.

After questioning the patient I invariably make a physical examination, preferring to have the patient lie on the left side, in the Sims position, and in a good light.

Inspection of the anus may give much information. An abundance of fine silky hair usually denotes a tuberculous patient, with whom any extensive

operation should, if possible, be avoided, and with whom chloroform is to be preferred to ether, for fear of exciting or aggravating a cough, the succussion of which in a rectal wound gives great pain and prevents healing.[1]

Note any discoloration, the red blush and swelling of an abscess, or the loss of pigment that occurs in pruritus, leaving the skin at the margin of the anus of a dull-white color. With pruritus there is frequently chronic eczema, and a thickening of the skin, sometimes close to the anus, sometimes an inch or more away from it. The characteristic itching usually becomes worse at night when the patient is warmed in bed. The laity know it as "itching piles." Piles are frequently found with pruritus, and the latter may disappear on the removal of the former. Pruritus may also be dependent upon a fistula, or any other local disease, and such causes (caries is a common one) must be carefully sought for; very frequently, however, pruritus is found in connection with a congested liver and a gouty or lithemic condition, and is aggravated by any excesses in living and by the use of coffee and by smoking.

A glance at the anus tells if there is any kind of external piles and tabs, these being usually the remains of old piles. When these tabs, or cutaneous external piles, as they are often called, are found swollen, shiny, and bathed in a discharge from the anus, they are significant of serious ulceration higher up, usually syphilitic or carcinomatous. Syphilitic sores and vegetations, and warty and other growths, and the scars of previous operations, should be observed.

By feeling around the anus with the pulp of the forefinger the indurated tracks of fistulæ can be traced beneath the skin, and by a little pressure along the track a drop of pus can frequently be made to exude from the orifice, which otherwise may be hardly perceptible. The orifice of an old fistula is frequently soft and pouting, and the discharge thin and watery. Such a fistula can be left for a while without operation with more safety than one discharging thicker pus, as the latter is in an active state and much more liable to burrow further. Careful search should be made in folds of skin and around the bases of tabs for small fistulous openings and fissures that may easily escape detection.

By telling the patient to strain, and at the same time placing the fingers on either side of the anus, and gently but firmly drawing the buttocks apart, nearly half an inch of the anus can be exposed, and fissures, polypoid growths, the openings of fistulæ, and perhaps internal piles, can be seen.

[1] A dry, harsh condition of the skin about the anus, with a number of small cracks or fissures radiating from it, is found in victims of the opium-habit.

In married women, a small portion of the anterior rectal wall can be everted by introducing the forefinger into the vagina and pressing it out of the anus. This is very useful in examining fissures situated anteriorly, or the perineal pile so frequent in women, but except in such cases it is of little use, as only a very small portion of the rectum can be seen in this way.

The forefinger, well anointed with vaseline or some other lubricant, should next be inserted into the anus. The pulp of the finger should be placed *on* the anus, and the patient told to bear down. As he does so, the sphincter is relaxed and the finger slips in easily, and much pain is avoided. At first, the finger should only go in a very short distance, just passing the external sphincter, and the surface of it should be swept over, as well as the space between the external and internal sphincters. This is the usual site for the openings of fistulæ, which can be detected by the educated finger, feeling sometimes like a dimple, and sometimes pouting and feeling like a gumboil.

If the indurated track of a fistula has been detected externally running posteriorly to a line directly across the center of the anus, the internal opening will be found in about nine cases out of ten in the median line directly posteriorly, no matter where the external orifice may be. It is of the utmost importance, before operating, to find the internal opening, because the sphincter must only be divided at one point, and that point is where the track from the internal opening passes under or through the sphincter.

Fissures rarely extend above the line between the two sphincters. As the finger passes over them, they are easily detected, and their extent ascertained. This space between the two sphincters is also a frequent seat for ulcers, the surface of which has a rough feel. Polypoid growths may be found here, as well as below and above.

The finger may then be passed over and above the internal sphincter, and swept around. Note any enlargement of the prostate, or if the uterus presses abnormally on the rectum, and is tender. Feel for ulcers and the tracks of fistulæ extending high up, the soft, fluctuating bulging of abscess, or any induration and narrowing of the canal by stricture, or by carcinomatous or other tumors. By bending the finger directly posteriorly, the anterior surface of the coccyx can be explored, and any tenderness of it or about the sacro-coccygeal joint detected.

Finally, the finger should be inserted to its full length to ascertain if there is any stricture or growth high up. More length can be gained here by keeping the other finger extended and pressed between the buttocks posteriorly, and should the symptoms call for such a measure, by having the

patient stand on his feet and strain down. Hardened feces are frequently felt at this stage, and may easily be mistaken for a carcinomatous growth. Find if the mass can be indented, and scratch it with the finger-nail. On withdrawing the finger, see if it is smeared with fecal matter, or with mucus, pus, or blood.

If the rectum is found loaded with feces an enema should be given and the patient examined immediately afterward. In some cases the enema is most useful, even if the bowel is empty. By this means a fibroid polypus with a long pedicle may be brought within reach and the finger hooked over the pedicle, when otherwise it may escape detection by returning higher up the bowel. Prolapsing internal piles will also be brought down, and can be inspected.

Internal piles are most difficult to detect by touch alone. The finger must be very well educated to recognize them. They usually lie on or below the internal sphincter, and can be detected by slightly crooking the finger and sweeping it around. In this way the sulci between the piles can be felt and the tumors themselves recognized.

Now, all this can be done by the intelligent use of the finger in the way I have described, and there are very few pathologic conditions of the rectum that, with a minimum of pain to the patient, cannot so be diagnosticated. The feeling is all done with the pulp of the last phalanx of the finger, and the mistake that is usually made by the inexperienced examiner is that of inserting the finger at once past the internal sphincter into the rectal pouch, and nothing abnormal being found there, withdrawing it without exploring either above or below. Lesions high up are not reached, and the sensitive part of the finger does not come in contact with those below, or it passes by them too hastily to notice their presence. In the large majority of cases the lesion lies within about an inch of the anus.

In many cases of fissure, and even of ulcer at the sphincter, the finger cannot be introduced without causing great pain. In some of these cases the application to the sore of a solution of cocaine, from 5 per cent. to 20 per cent., on a pledget of cotton, may cause sufficient local anesthesia to permit an examination; but in most cases it will be necessary to administer ether and dilate the sphincters, and so explore thoroughly, being prepared at the same time to do any operation that may be found necessary.

The speculum has but a limited use for purely diagnostic purposes. It is frequently useful in verifying the diagnosis made by the finger, and in searching for the opening of a small blind internal fistula, or for small lacunæ, or "pockets," near the anus, that occasionally give trouble; but its use will be more and more dispensed with as the surgeon becomes expert with his finger. The speculum often gives great pain, and if opened sufficiently wide for a thorough exploration its employment will frequently require the use of an anesthetic.

The diagnosis of stricture beyond the reach of the finger and in the sigmoid flexure is replete with extreme difficulty, the more so since the inability to pass a full-sized bougie is no evidence that there is a stricture except after repeated trials in skilled hands. I have seen Mr. Herbert Allingham pass his ball-staff into the sigmoid, but I have never succeeded in doing it myself, and Dr. Kelsey speaks of his inability to use the instrument satisfactorily. A bougie will usually be arrested at the promontory of the sacrum, and will also be caught in the folds of the mucous membrane. This may be partially overcome by using the soft rubber bougie, through which water can be injected and the folds drawn out of the way by dilating the intestine, but exploration of this region is always difficult and unsatisfactory.

Occasionally the introduction of the whole hand into the rectum, after the method of Simon, of Heidelberg, may be used to advantage, but it is a procedure full of risk to the patient, several deaths having been recorded from rupture of the intestine. If the symptoms point to stricture high up, and a satisfactory diagnosis cannot be made with bougies, I prefer to make an abdominal exploration, making the incision as in inguinal colotomy. There is little danger in this, and, if necessary, the colotomy can be done at the same time.

A REPORT OF EIGHT ADDITIONAL CASES OF PERINEAL SECTION WITHOUT A GUIDE.[1]

By J. EDWIN MICHAEL, M.A., M.D.,
of Baltimore, Md.

In the spring of 1887 I had the pleasure to read before the Medical and Chirurgical Faculty of Maryland a report of nine cases of perineal section without a guide. The paper was published in *The Annals of Surgery*, in July of the same year. Of these cases the operation was performed in one for old perineal contusion, in five for old gonorrheal stricture, in two for old pelvic fracture and resulting traumatic stricture, and in one for recent pelvic fracture. One of these cases died from carcinoma about a year after operation, and one from tuberculosis six months after operation. The rest, so far as I am informed, with the exception of Case VIII, who has since died of tuberculosis, are still alive and well. Since the publication of my paper I

[1] Read before the Southern Surgical and Gynecological Association, at Richmond, Va., November 10, 1891.

have been doing more work in the same line, and I propose in the present paper to report eight additional cases that have come under my care.

The operation is one of great value, both in gonorrheal and traumatic cases, and I think one is justified in bringing forward any experience in it that may be of use to the profession. My results, as will be seen, are very satisfactory—a fact that I attribute rather to the fortunate circumstance that my patients were largely free from grave constitutional disease than to any method or application that I have to suggest. I have simply followed what I consider the precepts of good surgery as applied to this region of the body, viz.: free incision, free drainage, and so much of antiseptic surgery as the circumstances will allow.

Case I.—W. T., fifty-one years of age, a bricklayer. He had gonorrhea at twenty, and has had several attacks since. At twenty seven a stricture developed, and gave him much trouble. Retention of urine occurred several times, and had to be relieved by the catheter. He has suffered a good deal of late from difficulty in urination, much straining being necessary, and the stream being very small. On May 9th, while making strenuous efforts to void his urine, there was felt sudden and severe pain in the perineum, followed by some relief from the desire to urinate and the early development of a painful swelling. When I saw patient, on May 13th, I was unable to pass an instrument into his bladder. The perineum was much swollen, and the scrotum and lower abdomen showed every evidence of extensive extravasation of urine. On the right side the swelling extended to the umbilicus, and well over toward the loin. The circumstances by which the patient was surrounded made operation at home practically impossible, and I had him removed to the Maryland University Hospital. On the following day I made large incisions into the connective tissue of the perineum, scrotum, and abdominal wall, freely laying open all the structures involved in the infiltration. I then sought the urethra in the perineum, and after only moderate trouble found it, and laid it freely open. The strictured bulbo-membranous region was then attacked from behind and freely incised, the operation terminating by passing a sound (No. 18 English) into the bladder through the urethra. Recovery was complicated by a considerable secondary hemorrhage from the abdominal incision several days after the operation, but in other respects the patient did well, the temperature not reaching above 101°. Sounds were passed on every third day, the wounds made on account of the urinary infiltration rapidly healed, and the patient left the hospital in about six weeks, in good condition, and able to pass a sound (No. 20 English). I have seen the patient within the last few months, and he tells me that his condition is satisfactory, and that he can pass a good stream of urine.

Case II.—C. H., thirty-eight years of age, a waiter. He entered University Hospital on April 1, 1888, suffering with stricture of the urethra and perineal fistulæ. Ten years ago he had repeated attacks of gonorrhea, and suffered several times from retention. About five years ago, after an attack of retention, two small fistulæ formed in the perineum. Urine escaped from these openings in small quantity for about six weeks, when they closed and remained closed for about six months. After this they opened, and discharged from time to time. The patient suffered often from retention, which was with difficulty relieved by catheterization, but he was able to continue at his work. On March 14th he fell into the hands of an electrical expert, by whom electrolysis was practised. Whether *post* or *propter hoc*, a perineal abscess followed. This was opened in the dispensary before his admission to the hospital. Upon admission the patient was in a deplorable condition. He was able to pass very little water, and that little in driblets, through his urethra and fistulæ with much pain and straining. Complete retention soon followed. Repeated attempts were made to relieve by catheterization, but no instrument could be passed. Anodynes and a hot sitz-bath brought some relief. On April 12th, all attempts to pass an instrument having repeatedly failed, the patient was etherized, and the perineal section without guide undertaken. The way to the bladder was again sought, both by way of the penis and the fistulæ, but in vain. The perineum was a mass of cicatrices, in which the urethra was vainly searched for, until, finally passing deeply into the perineum, the membranous portion was laid open and an instrument passed into the bladder. The strictured portion was then attacked from behind. When opened sufficiently for the purpose, the Otis urethrotome was passed, and the canal freely incised. After the operation a No. 18 English catheter passed easily through the urethra into the bladder. The hemorrhage in this case was tolerably free, but was kept measurably under control by irrigation with a hot solution of sublimate, 1 to 1000. After completion of the operation, the hemorrhage continuing to be troublesome, the wound was lightly packed with iodoform gauze, and the patient's legs tied together. In the evening of the day of operation the patient was comfortable, and had a temperature of 98° and a pulse of 80. At 5 o'clock on the following morning there was a lively chill, and the temperature ran up to 105°, with a pulse of 120. The wound was unpacked and irrigated with sublimate solution, the water drawn by catheter, the bladder washed out with plain warm water, and the wound lightly packed and dressed as before with iodoform gauze. On the evening of the same day the temperature was 99°, and the pulse 108. No further complication occurred. A sound was passed on the third day, and regularly thereafter, and at the end of a week the patient was walking about the ward. At the end of the second week, all of the urine passed naturally, and both fistulæ and operation-wound were nearly healed. In the meantime the general health greatly improved, and when the patient left the hospital, about four weeks after operation, he was passing a good, full stream of urine, three or four times a day. I have no later information in regard to this patient's condition. The

case is especially interesting to me, not so much on account of the brilliant ultimate result of the operation as on account of the associated facts that the free hemorrhage made it necessary to pack the wound, and that there was such a decided urethral chill on the morning of the second day. The chill itself was a beautiful example of its class. On the day of operation the temperature was normal. On the morning of the next day it suddenly shot up to 105°. Within twelve hours it was practically normal again, and continued so until the patient was discharged. This fall of temperature occurred without antipyretic treatment, save irrigation of the wound and bladder, and re-dressing the perineum.

Case III.—J. H., twelve years of age. The boy was coasting, and fell from his sled with his head down hill and his feet up. The sled of a companion following close behind him struck him in the perineum, causing considerable bruising of the part. He paid comparatively little attention to the injury, and did not even mention it when he returned home. After being at home some little time he felt the desire to urinate, and went to the closet. Upon making the attempt he was surprised to see a drop or two of blood issue from the penis, and to find that he could not pass water. The family physician, Dr. W. F. A. Kemp, was called in, and attempted to relieve the boy by passing a soft catheter. The attempt failed, and the doctor asked me to see the patient. On the following morning, January 29, 1888, we met at the patient's house. The perineum was by that time pretty black, and the penis and scrotum considerably swollen. Attempts to pass instruments having failed, ether was administered, and the perineum laid open. The tissues were much contused, and a considerable clot was turned out. With some difficulty the urethra was found. A No. 8 English steel sound was passed through the wound, and we were astounded to see that it went in very smoothly, and continued to go without meeting any resistance until the shaft of the instrument was flush with the perineal wound, and the point easily felt under the abdominal wall, immediately below the umbilicus. The specter of ruptured bladder momentarily appeared to us, but when we reflected that there was no sign of shock or other grave symptom, we were comforted. A soft catheter brought away twenty-four ounces of normal urine, and relieved our apprehensions as well as the patient's bladder. There was moderate oozing from the wound, but not enough to give trouble. The wound was well cleansed and lightly dressed with iodoform gauze, and the patient put to bed. The subsequent course of the case was uneventful. Sounds were passed at intervals of a few days, and the patient made a good recovery. The interesting point in this case to us was the extent to which the sound passed up into the bladder when the urethra was first opened. Finding, however, that the sound passed up almost as high after the bladder was emptied, we concluded that the fusiform shape of the infantile bladder was in this patient retained to an unusual degree.

Case IV.—G P., forty years of age, a physician, had led a very irregular life from early youth, and among other accidents had had gonorrhea many times. He had been long aware of the fact that he had stricture of the urethra, and had treated himself occasionally during the quieter periods of his life. He was an alcoholic and an opium-eater, and his urine contained a moderate quantity of albumin and casts. Attempts to pass instruments became more and more difficult, until finally, in February, 1889, their passage became impossible. The urine still trickled away by drops, and the patient had to be aspirated on several occasions. Neither he nor I were able to pass an instrument through the urethra, and as his condition was growing more serious from day to day, I recommended external perineal urethrotomy. The patient hesitated somewhat, but finally consented. The operation was an unusually easy one. The stricture was in the bulbo-membranous portion. I did not attempt to go through it, but operated back of the affected region, and sought the membranous urethra. On this occasion I opened the urethra in less than eight minutes after making the first incision. After emptying and washing out the bladder, the stricture was attacked from behind and easily incised. A No. 18 English sound was passed through the urethra as the final step in the operation. The wound bled little, and was dressed as usual by lightly packing it with iodoform gauze. The patient was nervous and somewhat feverish for several days, and gave cause for uneasiness on account of his general condition, but ultimately made a satisfactory recovery. The perineal wound healed kindly, and when the man left the hospital at the end of three weeks a No. 18 English sound passed readily, and the stream of urine was full and free.

Case V.—F. Q., forty-three years of age, entered the hospital in December, 1888, with the following history: He had gonorrhea in 1868, and another attack in 1883. In 1884 he began having trouble in passing water. He then entered the hospital, and was treated by gradual dilatation, beginning with a filiform bougie, and working up to a No. 18 of the English scale. He left the hospital in good condition, and with instructions to return every few days to have an instrument passed. After a few visits he neglected to do this, and shipped as a sailor on a vessel leaving Baltimore. He had no trouble, however, until July, 1888, when he returned to the hospital in a worse condition than before. He was passing water by drops, and it was found impossible to introduce an instrument into his bladder. After several aspirations, and continued failure to pass instruments, it was determined to open the perineum. On January 3, 1889, the patient was etherized and the operation performed. The stricture was in the bulbo membranous portion, and the deep perineum was in good condition. In this case I first adopted a method from which I have since had great satisfaction, viz., that of using scissors after making the first incision. Making a free incision from the scrotal reflection to the verge of the anus with a bistoury, I passed a thread through the lips of the wound as usual, for the purpose of keeping the parts exposed. Then taking sharp-pointed scissors, and being enabled in that way to keep rigidly in the

median line, I went straight ahead, and was very agreeably surprised in being able to open the urethra in just eight minutes from the moment of making the first incision. I opened the canal behind the stricture, and easily passed a large instrument into the bladder. That viscus having been emptied and well washed out, I attacked the stricture from behind and opened it freely. As the final step a large sound was passed through the whole urethra into the bladder. There was no hemorrhage of any consequence. The wound was dressed as usual. The temperature chart shows 100° on the third day, and a practically normal line afterward. Sound (No. 18 English) was passed every third day, and the patient left the hospital February 2d, well.

Case VI.—C. E. K., twenty-four years of age, entered the hospital January 22, 1889, with the following history: While cutting timber in June of the previous year the patient was caught between two trees and very severely crushed. He was carried home, and seen by Dr. J. Lee McComas, of Oakland. The doctor found extensive fracture of the pelvis, and a ragged wound at the right side of the perineum. The patient was kept quiet in bed, and no special treatment used except with a view to overcome shock. In a few days a large swelling developed in the perineum and toward the inner surface of the right thigh. This was opened, and discharged a large quantity of pus, together with a splinter of wood as big as the little finger. Later, feces, urine, and pus passed freely from this opening. When the patient entered the hospital, feces had ceased to pass by the fistula, but pus and urine continued. Some urine also passed by the penis, but this, as well as that which passed by the fistula, was mixed with pus. The right thigh was fixed in the flexed position, somewhat adducted, and the tuberosities of the ischia were only two inches apart. No instrument could be passed into the bladder, but on the right the probe could be passed far up the fistulous tract. On March 1st the patient was etherized, and external perineal urethrotomy performed. The operation was very difficult, and took a long time. The distortion of the pelvic bones, as well as the cicatricial condition of the soft parts, robbed me of all anatomical aid, and the only guide I had was the prostate gland, which I could feel through the rectum. Finally, however, the bladder was reached and washed out, the urethra opened, and a large soft catheter passed and tied in. This procedure, which I abominate, and never use if I can help it, was necessary in this case, as will be readily seen from the preceding description of the parts as I found them. By using a wooden plug, the catheter was controlled and the urine evacuated at will. The patient did well for the time, and at the end of two weeks went home under the care of Dr. McComas. Later, however, he removed the catheter from the bladder, and was not able to replace it. He continued doing reasonably well for a time, but grew worse again, and returned to the hospital in January, 1890, in as bad a condition as before, with the addition of much cicatricial tissue in his perineum. I tried again to make the section, but failed, and subsequently established the continuity of the urethra by first making an epicystotomy, and then passing a sound from above the pubes through the prostatic urethra, and cutting down on it in the perineum. A long tube was then passed through the epicystotomy-wound, and out through the urethra, with drainage-holes in the part that occupied the bladder. This operation gave the patient considerable relief. There was, however, much bone-exfoliation from the interior of the pelvis, which kept up the fistulous discharge; and although when he passed from my care the continuity of his urethra was established, he was still suffering much from the other effects of his serious injury, and will in all probability never be restored to full health. I was never able to determine the exact degree of injury inflicted in this case, nor to understand perfectly the mechanism of it. The main traumatism seems to have been an almost fatal squeeze between the two trees, which fractured the right half of the pelvis in some way. In addition to this there was a wound made by the perforation of the perineum by the splinter of wood referred to. Which of these wounds produced the damage to the urethra and rectum, thus causing feces, urine, and pus to escape from the same opening, it is difficult to determine. Several pieces of bone of considerable size were removed from the fistulous tract during the second operation, but they were so changed that it was impossible to say to what spot they belonged. The spines and crests of the ilia seemed normal, but the approximation of the tuberosities showed that there must have been pelvic fracture with considerable displacement. Cases VII and IX of my former series illustrate the manner in which the fractured extremity of the ischio-pubic ramus is thrust into the perineum, crushing all of the soft parts in the way, but I am by no means sure that this is the mechanism of the traumatism now under discussion. This case is also particularly interesting to me, as it is the first in which I was unable to reach the urethra in the perineum after repeated trials. The method of finding the urethra by retrograde catheterization is one I have had in mind for a long time, but up to this time I have had no occasion to use it. It was first used by Brainard, of Chicago, in 1849, and has since been used by others, but it is not so much as mentioned in many books on venereal surgery. The ease, comfort, and safety with which this operation can be performed made a great impression on me, and I have made up my mind never again to undergo the trying ordeal of a long and tedious perineal section, especially on a patient with a full bladder. In cases in which the stricture is in the usual place, and there has been infiltration or the formation of fistulæ, the section without a guide is not difficult, and the supra-pubic opening is not necessary; but when one has to operate in a mass of cicatrices, and cut and feel from hour to hour, and perhaps at last find that he has been within a hair's breadth of the canal all the time, the supra-pubic incision will save much time and hard work, as well as much unnecessary wounding of the perineal tissues.

Case VII.—J. H., colored, thirty-five years old, a laborer. I was called to see this patient by Dr.

R. M. Hall, of Baltimore. Finding the circumstances such that I could not treat the patient satisfactorily at home, I recommended that he be taken to the University Hospital. He gave the following history: He had had the usual diseases of youth, but denied venereal disease of any kind. On March 1st, while carrying a hod of mortar, he slipped and fell across a plank. He does not think he was struck in the perineum, but afterward had trouble in passing urine, and his water was stained with blood. He continued to work until March 7th, when he had an attack of retention. An instrument was passed, but no urine flowed. Afterward he passed blood and then urine. He noticed a swelling in the perineum that gradually crept up the right groin and affected the scrotum. When first seen (March 15th), he presented the picture of a man with a rather large inguinal hernia. Soon after admission, on March 16th, complete retention having supervened and attempts to pass instruments having failed, the perineum was laid open, and a large amount of stinking pus evacuated. The urethra was easily found, because the burrowing pus had made a pretty clean dissection of it, and it stood out in the wound like a cord. The canal was opened, but the sound failed to pass into the bladder by reason of a tight stricture back of the point of incision. A fine director was, however, insinuated through the stricture and followed by a bistoury, and the constriction incised. A large sound was then passed through the whole length of the canal. The burrowing of the extravasated urine and pus had been so extensive that the wound now was a veritable yawning chasm, which extended from the deep perineum through the right half of the scrotum to the hypogastrium. The room in which the operation was performed was scarcely habitable by reason of the fetid odor of the pus and urine that had been evacuated. Yet the general condition of the patient was, on the whole, satisfactory. The cavities were loosely filled with iodoform gauze, and the perineum dressed with a large, loose pad of the same, backed by absorbent cotton. On the third day the temperature rose to 104°, and for several days thereafter was somewhat irregular. On March 22d a large abscess was discovered in the left buttock. This was incised and drained. After this, improvement was more manifest and the patient recovered gradually. A No. 18 English sound was occasionally passed. When discharged from the hospital, at the end of a month, the patient had almost recovered his full health.

Case VIII.—R. R , about twenty-five years old, a carpenter, on October 11, 1891, fell astride the round of a ladder and hurt himself. He did not, however, regard his injury as of much consequence. Finding that when he attempted to urinate only a little blood came, and that his perineum was beginning to swell, he called his physician, Dr. J.W. Laird, who attempted to pass a catheter. The attempt failing, I was called in consultation. I also failed to pass an instrument, as was to be expected, and immediately proceeded to make the section. The patient was a man of nerve, refused to be anesthetized, and exhibited admirable fortitude during the operation. The perineum was freely laid open from scrotal reflection to the verge of the anus. Some clotted blood and much bruised tissue was exposed. The dissection was carried down in the median line with scissors, and the urethra easily found and opened. The case progressed well, and the wound healed kindly. There was, however, some difficulty in passing urine. Some weeks after the operation I saw the patient, and made a hurried attempt to pass an instrument, but failed. There was no urgency in the symptoms at the time, and I asked him to come to me at another time. Since that visit I have not seen him, and so cannot give the ultimate result of the case. So far as the operation is concerned, however, it was easily done, and served its purpose perfectly, and probably saved the patient much suffering from urinary infiltration and suppuration of the perineum.

Remarks.—The report of these eight cases brings up the number of patients on whom I have made the operation of external perineal urethrotomy to seventeen, and the conditions that made that operation necessary include nearly all of those that ordinarily indicate it. None of the patients have died at a period earlier than six months after the time of the operation, and the deaths that have occurred were due to other causes. I have only to add to the remarks made at the conclusion of my last report, that increasing experience leads me to have more and more confidence in the good results of opening the perineum, and less fear of danger. It is true that I have had unusually good fortune in operating on cases that, as a rule, presented no grave kidney lesion; but while it must be admitted that such complication adds to the risk of the operation as such, if not more than it does to others of equal gravity, I am firmly convinced that opening the perineum in old stricture cases with bad kidneys is much freer from danger than internal urethrotomy, or even dilatation. A case in point may not be out of place.

About ten years ago I did an internal urethrotomy on a patient with an old tough stricture. In forty-eight hours he had a temperature of 107°, and was very ill. The same patient returned to me a few weeks ago; I could pass a No. 10 English sound with difficulty. The stricture was resilient and closed after the sound to such an extent that urination was difficult and unsatisfactory. The patient had been having chills, and was somewhat nauseated and weak. His urine, although ammoniacal and ropy, contained no evidence of grave kidney trouble. I proposed a combined internal and external urethrotomy, and refused to do either operation without the other. The patient consented. I opened the perineum freely, and cut the urethra with the Otis instrument to No. 40 French. The temperature did not rise above 100°. The patient did well in every particular, and in three weeks I sent him home, passing a No. 36 French instrument on himself.

FACIAL ERYSIPELAS COMPLICATING TYPHOID FEVER.[1]

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OF all complications occurring during the course of or following as a result of typhoid fever, erysipelas in general, and especially the facial variety, is the rarest. Having had the opportunity to observe four cases during the past six months, I desire to add reports of them to the literature of the subject. The first two cases occurred within three days of each other—the patients occupying beds about thirty feet apart, upon opposite sides of the ward. Care had been taken to isolate the first case in a private room with a special nurse, but the same physicians visited both patients. The first case is as follows:

CASE I.—W. G. La C., a printer by occupation, twenty-six years of age, was admitted May 7, 1891, with a history of having felt dizzy, dull, and tired for three or four weeks, with gradual loss of appetite, and frontal cephalalgia, so that he was unable to look up. The bowels had been costive until relieved by laxatives ten days before admission, when they moved from four to eight times, the discharges being thin and light-yellow. Clots of blood had been daily removed from the nose, but there had been no epistaxis. The man had been unable to work and was obliged to go to bed fourteen days before coming to the hospital.

Upon admission, May 7, 1891, the patient complained of a dull and tired feeling. There was moderate tympanites, with extreme tenderness over the right iliac region. The bowels were moved twice in twenty-four hours, the feces being thin, watery, and fetid. The temperature was quite characteristic, and on May 15th there was a typical roseolous eruption. On May 18th there were severe epistaxis and marked muscular twitchings; the man was constantly picking at his nose.

On May 19, 1891, the twenty-seventh day after taking to bed at home, a well-defined erysipelatous swelling appeared on the right side of the nose and face. The pulse was rapid (120) and weak and the patient was placed in a private room with a special nurse. He was put on cardiac stimulants, whiskey, ammon. carb. and tr. digitalis every four hours, alternating with tr. ferri chloridi, ♏xv, with applications of wet boric acid dressings.

On May 21st the swelling had extended to the left side of the face and nose. There was a busy, muttering delirium, the pulse was weak and rapid (130), and there was marked tympanites. The man died May 22d. A post-mortem examination was made, but failed to reveal any but the usual typhoid lesions of the third week.

CASE II.—The second case, that of C. C., a laborer, admitted May 6th, occurred in the same ward three days after the discovery of the first case. The patient was twenty-eight years old and in robust health up to the beginning of his illness. This began ten days before admission, with all of the early symptoms of typhoid fever, which in the hospital became moderately severe, the afternoon temperature daily reaching 105°, but yielding to the full bath and antipyretics. On May 13th the urine contained albumin, and hyaline and granular casts. On May 14th the man had three severe intestinal hemorrhages, and upon the next day another of smaller amount, and he vomited an ascaris lumbricoides or round-worm. His temperature again rose to 104.8°, but gradually fell to 100° on May 21st, and the general symptoms seemed to be those ot beginning convalescence; but upon May 22d, the twenty-seventh day of his illness, a typical erysipelatous swelling, extending over both sides of the face, nose, and forehead, was noticed. The temperature again rose to 103° and the patient was removed to the isolation-ward under the care of a special nurse. Typhoid orders were stopped and wet boric acid dressings were ordered to the face and head, and tr. ferri chlor. ♏xx, whiskey ℥j, strych. sulph. $\frac{1}{32}$ gr., every four hours. Upon May 24th the man was restless and delirious in a busy and constant-muttering way. The erysipelas had spread to the eyelids, neck, and ears. The pulse was weak and rapid (140-160), and despite careful stimulation the patient died on June 3d, eleven days after the appearance of the erysipelas.

In both of the cases reported the complication markedly increased the gravity of the illness. Both had certainly passed the danger-point, the second after four hemorrhages, when the facial erysipelas began. There were no other cases in the regular wards of the hospital until October, 1891, after an interval of five months, during which time the special ward designed for erysipelas patients had been vacant.

The third and fourth cases occurred in different wards, but under the care of the same physicians—the third in the male, the fourth in the female medical ward—there being an interval of eight days.

CASE III.—R. R., German, female, twenty-seven years of age, entered September 25, 1891, having been ill for four days, with early symptoms of typhoid fever. Upon admission she presented a typical picture of the first week, viz., tremulous, whitish furred tongue, tenderness in the right iliac region, enlarged spleen, dulness and languor, and a stupid expression. The temperature was 102.8°, but upon the following day dropped to 99.2° and rose on the same day to 101.8° and assumed the characteristic type until October 2d, when it fell gradually to nearly normal. The patient now seemed quite bright; her pulse was 100, and the case appeared to be one of only moderate severity. On October 6th the temperature again rose to 103.4° and the pulse became more rapid (132–144). Cardiac stimulants were ordered and patient did well until October 11th, the twenty-first day of her illness (according to her statement), when erysipelas began upon the bridge of the nose, and extending rapidly on both sides of the face,

[1] Read at the Meeting of the Cook County Hospital Clinical Society of Chicago, November 5, 1891.

assumed a butterfly form with sharply outlined margins. She seemed very stupid and dull, the lips cyanotic, the face and hands pale and cold, the respiration rapid (40), the pulse 144, weak and irregular. With the appearance of the erysipelas a sudden change had occurred. The patient was transferred to an isolation-ward, placed under the care of a special nurse experienced in the care of this class of cases and given cardiac stimulants; nourishment was given by the mouth and rectum. Tr. ferri chlor. ♏xv, every four hours, and the application of a 10 per cent. solution of ichthyol to the face were ordered. The patient's condition, however, rapidly became worse, and she died on October 14th, having been delirious, with rapid respiration and frequent pulse, and constant involuntary muscular twitching prior to death.

CASE IV.—The fourth case occurred eight days after the preceding, upon the twenty-second day of the patient's illness, following shortly after several attacks of epistaxis and constant picking at the nose.

J. P., a Swede, thirty-eight years of age, was admitted to the ward October 4, 1891, with a temperature of 104°, and marked involuntary twitchings of the muscles of the face and hands. He presented all the objective symptoms of typhoid fever. His tongue was very dry and coated with brown sordes, and there was a busy, muttering delirium. He was ordered resorcin as an intestinal antiseptic, with the addition of quinine and strychnine, and he was placed upon typhoid orders. Within three days his temperature dropped to 96° (axilla) (the reason for this being unascertainable), and remained at 101.2° until October 15th, when the patient seemed very bright, with tongue quite clear; the temperature became normal, with the pulse 96. With the aid of an interpreter the patient was able to state that he had been ill seven days prior to admission and had had typical prodromal and early symptoms. Convalescence seemed to have begun—the good effect being ascribed to the resorcin, when upon October 17th he had one slight and two severe attacks of epistaxis. He did not seem as rational, and he was constantly picking at the nose with his fingers. Upon the evening of October 18th the temperature suddenly rose to 101.5° (axilla). No cause for this rise could be found, but upon the following morning the man was quite delirious, the pulse 120, weak and irregular. A well-defined erysipelatous swelling was now present upon both sides of the face and nose and upon the upper lip. It was estimated that this must be the twenty-second day of his illness. He was immediately transferred to the isolation-ward. Cardiac stimulants, tr. ferri chlor. ♏xxx, every four hours, and constant application of wet boric acid dressings were ordered. The respiration was shallow and rapid; there was marked delirium; the pulse was 120, weak and irregular; and death took place October 20th—thirty-six hours after the first recognition of the disease.

Although the mortality-rate in the cases reported is very high, we feel confident that everything possible was done in order to save them. Experienced nurses, prompt recognition and medication were employed.

According to Liebermeister in his exhaustive article upon "Typhoid Fever" in *Ziemssen's Cyclopedia*, erysipelas as a complication generally occurs during convalescence and rarely at the height of the disease; the complication may be a dangerous factor.

Of 1420 cases of typhoid fever seen at Basle, erysipelas appeared in ten cases, all of which recovered. In other words, the complication occurred in a little less than one per cent of the cases.

In our own hospital, in 1200 cases occurring in the regular wards since 1888, there are records of two cases, one of which recovered, while the result in the other case is not mentioned, so that we have had six cases in 1200, or one-half of one per cent. Gerente, quoted by Hare and Patek in their article upon "Rare Complications of Typhoid Fever,"[1] has found, including Liebermeister's, that erysipelas occurred in sixty-four cases of 3910, or nearly 2 per cent. He has also found that it is most frequent in the grave adynamic forms of typhoid and in those of long duration. It shows itself especially, and almost exclusively, during the last period and during convalescence, as in my cases. According to Gerente, it produces a marked amelioration of the symptoms, but with this statement I cannot agree, as in all of our cases it caused a most decided change for the worse, and almost immediately increased the gravity of the prognosis. Gerente also states that the appearance of facial erysipelas in typhoid is of grave prognosis (sixteen deaths among thirty-six cases), the gravity lying less in the erysipelas than in the poor general condition of the patient.

The question as to the path by which the germs gain entrance has been much discussed. According to Griesinger, they enter by means of an inflammation of the frontal or sphenoidal sinuses and also when ulceration of the buccal mucous membrane exists. In the foregoing cases it seems quite plausible that the germs should have gained entrance by the abraded surfaces caused by the constant picking at the nose after the epistaxis in the first, second, and fourth cases. In none of these was there any visible buccal ulceration or any stomatitis.

Unfortunately, at the time of the occurrence of these cases we were unable to make any cultures from any fluid removed. Whether the streptococcus erysipelatosus of Fehleisen is the cause of the erysipelas complicating typhoid is doubtful in some cases, for Rheiner[2] was unable to find the germ in two cases of gangrenous erysipelas following typhoid. In these he found bacilli which he believed

[1] THE MEDICAL NEWS, June 20, 1891.

[2] Rheiner: "Beiträge zur pathologischen Anatomie des Erysipels bei Gelegenheit der Typhus-Epidemie in Zürich, 1884." Virchow's Archiv, Band c, S. 185.

were identical with the Klebs-Eberth bacillus of typhoid. Hare and Patek found the streptococcus of Fehleisen in some serum removed from one of their cases.

In regard to the treatment there is little to be said. A number of specifics have been recommended. The erysipelas in these cases of typhoid is of short duration, and the first indication is to stimulate. Camphor is especially recommended. Hot antiseptic compresses or painting the parts constantly with ichthyol complete our present therapeutic measures.

THE RECENT INVENTIONS OF NEW OPTICAL GLASS.

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THE microscope is chief among delicate optical instruments, and "what it has accomplished constitutes the glory of the natural sciences." Since the discovery of the compound microscope in Holland, about 300 years ago, it has passed from the workshop of the spectacle-makers to the hands of the trained optician, where it has undergone, by successive gradual steps, those corrections and improvements that we see in the instrument of to-day. Transmitted light was first used in 1685, the reflecting illuminating mirror in 1715, and the greatest of all improvements—the achromatic and aplanatic objectives—in 1824. Bacteriologic study must be credited with a great share of the more recent advances, for in this work the constant endeavor is to see further and finer in the search for the physiologic and morphologic structure of the ultimate protoplasmic bodies or cells of all living tissues.

Up to the beginning of the last decade it may be said that the limit of performance had been reached, with the lenses in use, composed of the ordinary crown and flint glasses, taking into account the best individual management and technique—the most important element of success in microscopy. Faraday, Ross, and a clergyman named Harcourt, in England, Chevalier in Paris, Amice in Italy, Fraunhöfer in Germany, and other less well-known men, had years ago produced new and improved glass and lenses; but impermanency of external surface, due to instability of the elements of the glass, proved an insurmountable obstacle to its general use, as also the enormous attendant expense of further investigation and production. It came to be universally felt that if we were to advance further in the study and knowledge of the infinitely little, in all branches of natural science, in biology and medicine particularly, and in view of the fact that the limit of perfection regarding the management of spherical and chromatic aberration had been reached, new glass must be produced. The history of previous attempts in this field was of much value. Bodies of lower refractive indices were known, such as the diamond and other precious stones, but, for various reasons, the employment of these was impracticable; but fluor-spar or fluorite, having both a low-color dispersion and a low refractive index, was taken up, and objectives of vastly improved qualities produced. This mineral, found native in the Bernese Alps in Switzerland, offered great convenience in the choice of kinds of glass to be used in obtaining perfect compensating effects for the removal of chromatic and spherical aberrations, and neutralizing subsidiary effects in lens systems. But it was soon discovered that fluor-spar could not be obtained in the quantity and of the quality desired, and attention fortunately was now turned solely to the laboratory.

It was here that the Prussian government stepped in, and with a grant of 60,000 marks ($15,000) the experimental stage of the work was begun in Jena, about ten years ago, under the direction of Drs. Abbe and Schott, and their associates in physics and chemistry. In two and a half years the chief practical work of the investigation was effected, and they succeeded in determining experimentally the mutual relations of optical effect and chemical composition, for all possible amorphous compounds produced by solidification after fusion. A whole year was spent in collecting data, on which it was predicted that a systematic investigation of the question of glass-smelting would lead to an advance in practical optics.

The impossibility of getting rid of the chromatic differences of spherical aberration is dependent on the fact that, with the crown and flint glass formerly used, the dispersion always goes hand-in-hand with the mean refractive index, so that the higher dispersion always belongs to the higher index, and *vice versa*. The aberration would be completely, or at least approximately, compensated, if we possessed materials in which a relatively low refractive index was combined with a high dispersion, or a high refractive index with a relatively slight dispersion. It would thus be possible, by a suitable combination of such a material with the ordinary crown and flint glass, to remove the chromatic and spherical aberration independently of one another, and thus to fulfil the essential condition on which the removal of the chromatic difference depends. The perfecting of delicate optical instruments appeared, therefore, to depend on an advance in the art of glass-smelting, so that it should be possible to produce glasses, suitable for the removal of the secondary spectrum, in which dispersion and mean refractive index would be differently related than in the glasses then in use.

The uniformity in optical properties that char-

acterizes most kinds of glass is due to the small number of materials used in their manufacture, viz., silica, alkalies, limestone, lead, and, in lesser degree, clay and thallium. The great aim was to advance beyond these narrow limits; and, directed by a methodical study of the optical characters of various chemical elements, the investigators used such as appeared suitable to the end in view. They had to produce a glass free of foreign matter, and with a not too strong action on the walls of the containing vessel; to be kept homogeneous by energetic stirring while in the molten state, so that it would be free from striæ of refractive indices different from that of the main mass; free of cloudiness, crystal-formation, and blisters, in melting and cooling; to bear reheating to the melting-point without cloudiness or crystal-separation; kept free from strains by suitable process of cooling; it must offer sufficient resistance to atmospheric agencies, and must show no signs of hygroscopic properties; be colorless; and of sufficient hardness to allow of grinding, polishing, and shaping of the refractive surfaces.

Only relatively few inorganic anhydrides give rise to amorphous bodies when fused with certain metallic oxides and cooled. Hitherto, silica was the only one that answered the requirements named, but boric, phosphoric, and arsenic acids were known to yield glass-like bodies in certain of their compounds. The fusions of phosphoric and boric acids with a great number of metallic oxides, working with small porcelain crucibles and laboratory blow-pipe, yielded, after many failures, glasses of extraordinary variety, and thus showed that considerable gradations in refractive index and dispersion could be obtained by their use. Finally, after long and wearisome labor, samples of glass weighing upward of 25 kgm. were obtained, large enough for all practical and scientific purposes. By these the optical characters of a large number of metallic oxides were soon recognized, and it was found possible to incorporate in the glass, in quantities above 10 per cent., twenty-eight other bodies, besides the five hitherto used. There were: Boron, phosphorus, lithium, magnesium, zinc, cadmium, barium, strontium, aluminium, beryllium, iron, manganese, cerium, didymium, erbium, silver, mercury, thallium, bismuth, antimony, arsenic, molybdenum, niobium, tungsten, tin, titanium, uranium, and fluorine.

The first object of the investigation—the power of obtaining gradations in refraction and dispersion—was thus attained. For the removal of the secondary spectrum, however, only comparatively few elements were found to offer suitable variations from the ordinary course of the dispersion. Of these, boric acid produced a contraction of the blue and a widening of the red extremity of the spectrum, while fluorine, potassium, and sodium had an opposite effect. For all other elements the course of the dispersion was the same as with silicate glass. Accordingly, since the ordinary flint glass shows an extension of the blue extremity of the spectrum as compared with crown glass, as high a percentage of boric acid as possible must be incorporated with it in order to obtain a perfect compensating effect. Thus boric acid has become the fundamental constituent of all flint glasses destined to diminish the secondary spectrum. The conditions are less favorable when it is desired to effect the compensation by widening the blue extremity of the spectrum of a crown glass. Of the three elements—fluorine, potassium, and sodium—suitable for this purpose, the last only can be introduced into silicate glass in very small quantities, and the potassium in quantities not exceeding 25–30 per cent.; this because of their hygroscopic effect.

The chief characteristic of phosphoric acid—that of yielding glasses of comparatively slight dispersion, with high refractive index—was made use of to solve this problem, for it had been found that, with equal ratio of refraction and dispersion, glasses of higher refractive index showed an extension of the blue extremity of the spectrum. Thus, by the use of phosphoric acid for the crown glass, and a glass containing a high percentage of boric acid for the flint, it was found possible to almost completely remove the secondary spectrum.

While introducing material to produce certain optical effects, an important point to be considered was the modification of the composition of the glass, so that its external character should remain satisfactory. With phosphates and borates the alkalies must be used sparingly, or deterioration of the polished surfaces of lenses under the influence of the atmosphere is unavoidable. It was ascertained, however, that certain glasses, in themselves hygroscopic, could be made serviceable by the introduction of large percentages of clay, zinc oxide, or other compounds, but with the greatest accuracy, otherwise partial or complete crystallization ensued. On this ground many of the possible borate and phosphate glasses had to be excluded. However, a series of phosphate and borate glasses were produced. For the phosphate, magnesia, clay, and potash offered the least resistance, so that a crown glass could be produced with dispersion far less than that seen in any yet made. The use of baryta with phosphoric acid in a crown glass caused a decrease of refractive index, and at same time a lower dispersion. An aluminium-sodium-baryta-borate gave a borate crown glass, the ray-path of which is useful for many purposes. The borate flint glasses, containing as much 50 per cent. of boric acid, were made by the addition of clay, zinc oxide, and barium

oxide, to satisfy all requirements, and to show no sign of hygroscopic characters.

The problem of the removal of the secondary spectrum having been satisfactorily settled by the production of the phosphate and borate glasses, attention was now directed to the improvement of the ordinary silicate glass in common use. By the introduction of boric acid, zinc ozide, magnesia, baryta, and clay, silicate crown and light flint glasses were obtained with very varied relations of refraction and dispersion. These combinations are found to be of great service in aplanatic constructions for photographic purposes, for, owing to their increased transparency for the chemically active rays and their slight dispersion, they give plane and sharp images in the camera.

Dr. Schott's experience with "Hart" glass, some years preceding this investigation, proved valuable when the problem of cooling, and the effect of strain, came to be considered. By experiment he had proved that the hardening of glass proceeds inward, layer by layer, and this induces a state of strain, manifesting itself by diminished specific gravity and the phenomena of double refraction. These excentric strains are especially harmful in lenses, as the focal length varies in different parts, as if it were cut irregularly in the direction of the strain. Finally, the molten contents of the thick copper cauldrons were cooled so gradually that a fall of ninety-five degrees of temperature extended over periods as long as four weeks, the large gas flame being connected with a mercury vapor pressure thermometer, both regulating the flame and marking the temperature. It became necessary to construct complicated and unusual apparatus for the production of the glass in large quantities. For making borate glass, platinum crucibles and stirrers with rotary and up-and-down motions became necessary. Corrosion of containing vessels, cooling of surface, and formation of air-bubbles and striæ in cooling, had all to be overcome.

Coming now to the practical benefits, the result already realized from these improvements and inventions is that while microscopically we could distinguish objects in the approximate form of circles or squares of a diameter of $\frac{1}{100000}$ of an inch, we now distinguish them if 125,000 to the inch. Yet this may make the difference between tracing definitely some part of the life history of a microorganism, or failing to trace it. There is still on this side of the ocean a doubt as to the stability and durability of the new glass, and the new "apochromatic" objectives made from it. Some of the first objectives from the workshops of the leading opticians in Germany have been returned for the removal of external surface defects—probably of a hygroscopic character—due in ordinary use to extreme sensitiveness and chemical action from atmospheric exposure. But the later objectives are more stable, and are coming into more extended use when it is desired to attain the highest results in biologic study. There is no longer just reason for denying the superior qualities of these new lenses for definition and management of light and color. For the average worker in biology and pathology, the best lenses of superior crown and flint glasses, in skilful combination, by trustworthy makers, are sufficiently satisfactory for all practical purposes, the cost being also not over a third of the newer apochromatic objectives. As time goes on, improved systems and combinations of lenses are constantly being invented, much use being made of the older crowns and flints combined with the new glass in the same system; and, with the increasing technical skill in smelting, and a better appreciation of the physics of optics, for which the Germans must be given the chief credit, the cost will in all probability, in the near future, be placed within the means of all those workers desiring these improved "oculars" and "objectives." The number of the varieties and kinds of glass used for optical purposes is now upward of sixty-six, and additions to the list are frequently reported. The microscope is no longer a toy, nor is its use solely relegated to laboratory workers, but it has become an essential part of the modern properly equipped and successful physician (successful in appreciating the character of disease); of the workers in all branches of natural science; for detecting adulterations in foods, in water, in fabrics, the forging of documents and the imitations of handwriting; in fact, this instrument is of the first importance in all later educational and scientific work. When we reflect upon the advance in scientific procedures in recent times by means of spectroscopes, telescopes, and the various optical instruments now in general use, and their extraordinary improvement within the last decade, the character of the advance in our knowledge of glass-making is better appreciated.

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Prescribing Opticians.—According to a decision recently given by a judicial authority at Havre, an optician who gives a patient advice as to the condition of his eyes, and prescribes glasses to remedy defective vision, is guilty (according to French law) of the illegal practice of medicine just as if he had ordered remedies or given medical advice without possessing a diploma recognized by the law.

LEGISLATION IN PENNSYLVANIA ON MEDICAL AND HEALTH MATTERS DURING THE SESSION OF 1891.

By HENRY A. RILEY, A.B., LL.B.,
OF NEW YORK.

THE special subject attracting the attention of the profession prior to and during the late session was the passage of some act regulating the examination of applicants for medical practice. Several bills were prepared and earnestly advocated, but no law was passed, and the struggle will no doubt be started again when the Legislature meets next year.

An important law was enacted, providing for an Asylum for the Chronic Insane. A board of five commissioners was authorized to be appointed by the Governor to select a site and erect the buildings. The site was to be convenient to the other asylums for the insane, and to contain not less than five hundred acres of land. The cost of the land and buildings was not to exceed $500,000, and the plans for the buildings were to be approved by the Board of Public Charities. The time for erecting the buildings was fixed at three years, and when finished they were to be turned over to a permanent board of nine trustees. The asylum is to be wholly devoted to the chronic insane, and persons who have been insane for any period less than a year are not eligible for admission.

A commission of five persons, including the Governor, was authorized to select a site for a quarantine station on the Delaware River, remote from the centers of population.

It was also authorized to inquire into the feasibility of a joint quarantine for the protection of all parts of the Delaware River and Bay, to be controlled by the several States bordering thereon. A report was directed to be made to the next Legislature.

An appropriation of $383,852.02 was made to repay the amount placed in the hands of Governor James A. Beaver by the People's Bank of Philadelphia and William H. Kemble, to meet the expenses incurred by the Johnstown flood. This amount was loaned without interest, and entirely on the promise of Governor Beaver to use all honorable means to procure the repayment by the State when the Legislature should meet.

The general run of decisions in the various States has been to the effect that bequests for the care of graves are void if made in perpetuity, as not being for a charitable use. The Legislature, however, passed two laws on the subject, which are certainly of importance and interest. One declared that property left for the care and maintenance of cemeteries and graveyards, or for graves and monuments therein, or for erecting the same, shall be deemed to be left for a charitable use, and shall not be void on the ground of tying up property in perpetuity.

The other law allowed incorporated cemetery companies to accept, by deed or will, devises or bequests in trust for the care and decoration of family burial lots, vaults, or graves, provided the cemetery companies report to the Court of Common Pleas of the county, and obtain the approval of the court to the investment of the principal sum of the bequests.

A very elaborate and detailed law for the proper management and working of coal-mines, so as to secure the best protection for miners, was passed, after having been considered and approved by a commission consisting of mine inspectors, mine-owners, and practical miners. Some of the provisions of the law are as follows: The anthracite coal-fields are divided into eight inspection districts, with an inspector at the head of each. The inspectors are appointed by a board of examiners consisting of five members, three of whom are practical coal-miners, and two reputable mining engineers.

The salary of each inspector is $3000, and he is required to visit the collieries in his district as often as his duties will permit, or exigency requires, and he must see that every necessary precaution is taken to secure safety.

He must visit the scene of every accident, for the purpose of examining into the particulars, and attend all inquests on the bodies of persons killed at the mines.

An annual report is to be made to the Secretary of Internal Affairs, enumerating accidents, the condition of workings, ventilation, etc. The inspectors have the right to enter any mine, either by day or night, and must be supplied with accurate maps of the mines by the owners.

There must be two openings from each vein or seam of coal, for safe and distinct means of ingress and egress.

Mine-owners shall provide at the collieries an ambulance with two stretchers, for the purpose of conveying to his home or to a hospital any person injured. The ambulance must be provided with easy springs, bedding, spring mattresses, etc.

No boy under fourteen is allowed to work in a coal mine, and no woman or girl of any age. Boys under twelve cannot be employed in the outside workings.

A considerable portion of the law is taken up with detailed directions for ventilation and the regulation of blasts. Ventilating currents must be forced along the face of workings in sufficient volume to sweep away smoke and noxious gases. Inlet and outlet passages are to be separate. Doors must open automatically, and main doors must have an atten-

dant. In mines generating explosive gases, the foreman must examine, every morning, all working places to see if they are safe.

In cases of accident resulting in death, the inspector may notify the coroner to hold an inquest, if he deems it necessary.

If the inspector finds anything about a colliery defective or dangerous, he must give written notice to the mine-owners to remedy it. If the owners object to the carrying out of the notice, they can demand a board of arbitration, which shall within forty-eight hours decide the matters submitted to them.

If the owners or superintendent are negligent, and persist in refusing to carry out reforms demanded, they are liable to a fine of $500, and imprisonment not to exceed three months.

It is said that the crematory at Pittsburg has incinerated more bodies than any other in the United States, and it is not surprising that the Legislature passed a law requiring that before every cremation a permit shall be obtained from the Board of Health or local health authorities. Before this permit is issued the physician or coroner must file a written certificate, giving all the facts of death and the usual statistics.

The dairy and cattle interests were favored by a supplemental act, requiring all imitations of lard to be labelled "Compound Lard," in letters half an inch long. The penalty was fixed at $50 for the first offence, and $100 for subsequent offences.

The Pharmacy Law was amended so as to permit the legal representatives of a deceased registered pharmacist to carry on the business under the charge of a qualified and registered assistant.

The usual large appropriations were made for the State hospitals and public institutions, and many special bills were passed for permanent improvements, and for aiding in the establishment of new institutions. A good many appropriations were, however, vetoed by Governor Pattison, either on the ground that they were in excess of the amounts recommended by the Board of Public Charities, or had not been recommended at all. A further ground of disapproval in some cases was that the institutions were not under the control of the State. Some of the appropriations are of general interest, and are as follows: $14,650 was appropriated for cottages and maintenance at the Bituminous Coal Hospital, at Connellsville, and $13,000 for the same purposes at the Philipsburg Hospital; $15,000 was appropriated for erecting and furnishing the Chester Hospital, at Chester, provided $5,000 was raised by private subscription, and a site given worth, at least, $4,500; $12,500 was given the Shenango Valley Hospital, at New Castle, for erecting and furnishing new buildings, provided $10,000 be raised and paid into the treasury of the hospital by private subscription; $10,000 was appropriated to the Pottstown Hospital and Dispensary for new buildings, on the condition that suitable grounds be secured, and $10,000 raised by private subscription; the Carbondale Hospital Association received $10,000 for new buildings on the condition that a similar sum be raised by private subscription. The Pittston Hospital Association was to receive $15,000 for construction and furnishing, provided the Association should be legally incorporated, and the treasurer give a bond. Further conditions were also made that a site of not less than three acres be secured, and $5,000 subscribed by private persons. Some of the public institutions received appropriations for new buildings, etc. The Pennsylvania State Lunatic Asylum, at Harrisburg, was granted $20,000 for the purchase of additional land, and $10,000 for a lighting plant. The University of Pennsylvania received $20,000 for the extension and betterment of buildings for hospital purposes. The Williamsport Hospital was given $10,000 a year for two years, provided no distinction was made in the admission of patients, on account of color, nativity, or religion. The Homeopathic Medical and Surgical Hospital and Dispensary, at Pittsburg, received $15,636.52 for a deficiency, and $15,000 a year for two years, on condition that ten free beds be maintained, to be occupied by persons recommended by the Mayor or Poor Board; $12,500 was appropriated for the completion and furnishing of an infirmary at the Pennsylvania Training School for Feeble-minded Children, at Elwyn, and $12,500 for new buildings for feeble-minded girls afflicted with epilepsy; $15,000 was appropriated for building a home for the training of deaf children before they reach school age, and a commission of two persons was appointed to select a site and prepare plans, etc.

ORIGINAL LECTURE.

POLIOMYELITIS.

A Clinical Lecture delivered at the Arapahoe County Hospital, October 24, 1891.

BY J. T. ESKRIDGE, M.D.,
NEUROLOGIST TO THE ARAPAHOE COUNTY, ST. LUKE'S, AND DEACONESS HOSPITALS, DENVER, COLORADO.

GENTLEMEN: The case I wish to study with you today presents a feature of especial interest on account of the new diagnostic point between multiple neuritis and poliomyelitis that is beautifully illustrated:

A. I., twenty-two years of age, an expressman for the past five years, has suffered with paralysis of the left arm during the last four or five weeks. His family history is unimportant. His health was always good until the present illness. He has indulged only occasionally in alcohol. He suffered with two venereal sores in 1888, and had gonorrhea in 1889. He denies over-indulgence in venereal habits. Five weeks ago he began to feel

pain in the left elbow and shoulder. The pain was sharp at times, especially at night, but usually it was dull in character. The pain has remained about the same up to the present time. He has simply a sore feeling just above the elbow and in the shoulder. There are no shooting pains or numb sensations. He has suffered with pains in the back of the neck, but only for the last few days. These post-cervical pains first developed nearly five weeks after the beginning of the shoulder pain. Shortly after the first appearance of pain in the arm he noticed that it was difficult for him to use the part, but he is unable to say whether the loss of power was entirely due to paralysis of the muscles or partially caused by the pain felt on trying to move the extremity. He had no difficulty at the time in using the left forearm and hand, so that he feels certain that the loss of power was above the elbow. He consulted a physician at that time, who, without an examination of the arm, diagnosticated rheumatism and treated him for it. Subsequently, he presented himself at the clinic of the Arapahoe County Hospital, and Dr. Baker, suspecting neuritis and failing to make a diagnosis satisfactorily to himself, brought the patient to me. I made a careful examination at that time, and as his symptoms differ but little to-day from what I then found them to be, I shall ask you to study the case with me as I make the examination before you. The history, to state it succinctly, is pain, without apparent cause, beginning in the left shoulder and elbow, with some pain in the arm above the elbow, loss of motion coming on at about the same time and involving the muscles of the upper arm and shoulder, extending over a period of about five weeks.

Examination shows that there are no symptoms of ataxia in the legs, the knee-jerks are normal, and there is no ankle-clonus. The muscles of the lower limbs are well preserved and fairly strong. The dynamometer registers: right, 128; left, 88. The muscles of the right arm are quite strong. He is unable to abduct the left arm from the chest, owing to complete paralysis of the deltoid, but he can swing the arm backward or forward, bend and extend the arm at the elbow, and open and shut the hand with considerable force. All the muscles below the elbow seem to be in nearly a normal condition. The biceps and triceps are fairly strong; the deltoid is the only muscle that is completely paralyzed. There is partial paralysis of the trapezius, pectoralis major, and serratus. The last three muscles are considerably wasted, but not as markedly so as the deltoid. Measurements: Right forearm, 9⅛ inches; left, 8⅞; upper arm in contraction, right, 10⅛; left, 8¾; over the deltoid high up in the axillary space, right, 10¾; left, 8¾. Reflexes of the left forearm, normal; but of the deltoid, biceps, and triceps, absent. Tactile sense is normal throughout the arm and hand; neither are there spots of tenderness anywhere over the arm, although the patient complains of pain in various portions of the arm. When the muscles are relaxed, the joints, especially those of the elbow and shoulder, can be moved freely without giving rise to the least pain. He complains of considerable pain in the shoulder, but no tender spots can be found on pressure, and the muscles that seem to be the seat of pain contract without giving rise to discom fort

One point to which I wish to direct your attention especially is the action of the pectoralis major muscle. You are aware, from your anatomic studies, that this muscle is composed of two parts, the superior or clavicular fibers and the inferior or sternal fibers. When the arm is held in the horizontal position in front of the chest the superior portion of the muscle aids in further elevating the arm or in maintaining the arm in that position when weights are held in the hand. This portion of the muscle, when it acts alone, is an elevator of the humerus. When any resistance is offered to the arm in its descent from the elevated position, the inferior fibers of the great pectoral muscle contract and enable it to overcome this resistance, so that the lower portion of the muscle when acting alone is a depressor of the humerus. Now, if I take this man's right arm, which is strong and healthy, and abduct it from the side to the horizontal position, carry it forward until it is about at right angles with the front of the chest, and then request him voluntarily to carry the arm in front of the chest, you notice the superior fibers of the pectoralis major contract and carry the arm to this position. If, now, I resist the arm in this movement and request the patient to exert force to overcome the resistance, you see that the inferior and superior fibers come out prominently in contraction to enable the arm to overcome the resistance; so that we find when the superior and inferior fibers of this muscle act separately, one set elevates the humerus and the other depresses it, but when they act in association with each other they have one function in common, and carry the arm across the front of the chest. Now, let us study the action of this muscle on the affected side. On elevating the left arm to the horizontal position and bringing it to a point about midway between the lateral and anterior aspects of the chest, I request the man to further elevate the arm. He makes an effort, but there is no contraction of the superior fibers of the pectoralis major. While holding the arm in this position, I request him to depress it and immediately the inferior fibers come out in vigorous contraction and depress the arm with considerable force. On returning the arm to the position from which the inferior fibers have just depressed it, I now carry the arm a little more in front of the chest and request him to bring the arm across the front of the chest, and at the same time I offer slight resistance to this movement. In overcoming this resistance the superior and inferior fibers of the pectoralis major contract quite vigorously to bring the arm into the suggested position. You observe, then, that while the superior fibers are unable to contract in efforts to elevate the arm beyond the horizontal position, they act quite vigorously in association with the inferior fibers in carrying the arm across the front of the chest, so that we find the superior fibers of this muscle paralyzed for one movement and not for another. Now, what is the significance of this form of paralysis? Dr. Beevor, of England, in an article published in a recent number of *Brain*, claims that this form of paralysis in all probability can only be caused by lesions in the spinal cord or its nerve-roots, and not by a lesion in the brain or nerves. If these statements set forth by Dr. Beevor are proved by subsequent observation to be correct, they will become of very great importance in differentiating certain lesions of the nerves from lesions of the spinal cord.

We will endeavor now to make a diagnosis by exclusion, to see where we can locate the lesion in this case. With the history that this man gives, the first lesion suggested is neuritis. The pain of which he has complained from the first until the present, and the weakness of the arms, point to this condition. This view is still further strengthened by the fact that he was compelled in his daily occupation to lift heavy weights and carry them on his shoulder, which might have bruised the circumflex nerve, which, you know, supplies the deltoid, the muscle most affected in this case. The points that most militate against this view are the absence of tenderness and the preservation of sensation at all parts of the arm and shoulder. One of the most prominent symptoms in acute inflammation of nerves is sensitiveness of the nerve and of the muscle supplied by the nerve. Further, if this nerve were sufficiently injured to cause absolute paralysis of the deltoid, sensation would be affected in the cutaneous distribution of the nerve; but this we find not to be the case. There is no disturbance in any portion of the arm or shoulder in any form of sensation. Again, the pectoralis major muscle is supplied by two nerves—the internal and external anterior thoracic. These would not likely be injured in contusions involving the circumflex. And yet, again, it is hard to conceive that the lesion of the nerves resulting in paralysis would affect the muscle for one movement and not for another. Theoretically, at least, we would expect that nerve-lesions would affect to a greater or less extent all of the muscular fibers supplied by the injured nerves. It seems to me that we can exclude neuritis in this case.

From the absence of any history of cerebral symptoms, such as headache, ocular disturbances, affection of the facial muscles, either by occasional spasms or paresis, and the absence of any twitching of the muscles of the arm, and the limitation of the paralysis to half of the muscles at the shoulder, we are enabled to exclude brain-lesion.

The acuteness of the trouble makes it unnecessary to consider any of the chronic wasting diseases affecting the muscles by paralysis. We have left, then, but the spinal cord in which to place the lesion. In the absence of any sensory phenomena we are justified in concluding that the trouble is located in the cells of the left anterior cornua of the cord. As the deltoid, the muscle most affected, yet responds to a strong faradic current, the prognosis is good.

The treatment will consist of massage, electricity, and of strychnine, combined with a good nutritious diet. As the muscles respond to the faradic current, we will have this current applied, with slow interruptions, to the muscles for ten or fifteen minutes each day. We will have the muscles of the arm thoroughly manipulated once daily. Strychnine may be given by the mouth or hypodermatically. We will first try it by the mouth, beginning with $\frac{1}{30}$ of a grain before each meal, gradually increasing to $\frac{1}{18}$ or $\frac{1}{12}$ three times daily. If improvement after a while should cease, I will then direct $\frac{1}{24}$ of a grain to be injected into the deltoid muscle once daily. I have employed the hypodermatic method of using strychnine with very satisfactory results in certain cases of paralysis, and frequently have given $\frac{1}{10}$ of a grain daily, but such a quantity should not be given until the dose is gradually increased, so that the patient will bear it without any unpleasant effects.

CLINICAL MEMORANDA.

A UNIQUE CASE OF RICKETS WITH SYNCHRONOUS HEART-CONTRACTIONS AND INSPIRATORY ACTS, EACH 54 PER MINUTE.

By C. W. LEIGH, M.D.,
FORMERLY HOUSE SURGEON AND INSTRUCTOR IN CHICAGO POLYCLINIC; CAPTAIN AND ASSISTANT SURGEON, SECOND INFANTRY, I. N. G., CHICAGO, ILLINOIS.

THE patient, a male child, two years and two months old, suffered, as the mother stated, with shortness of breath; it was not disposed to play or exercise; it was mentally somewhat dull, although possessing a bright, intelligent face. It was easily frightened, did not have much appetite, drank water liberally during the night, and after doing so frequently coughed severely and then vomited. He had been constipated since birth, and had a habit of scratching or picking his nose; he had also cold sweats, and worried and cried during the night-time. In the third month of his life umbilical hernia appeared which had about disappeared at the time of the first examination.

Upon examination, the child was found plump in form and well nourished; the face somewhat pale, but intelligent in expression; the hair a very light yellow—almost white; the eyes blue. The head was large, the forehead somewhat projecting, as in rickets. Both anterior and posterior fontanels were open. There was no tabes cranii. The eyes were large, somewhat prominent, and the pupils normal. The mouth emitted a fetid odor due to badly decayed teeth and suppurating gums. There were no Hutchinson teeth. The roof of the mouth was highly arched. On the chest and abdomen, especially on the sides, there were some slightly enlarged veins. The middle dorsal vertebræ were slightly prominent; this prominence was not due to Pott's disease, as movement was perfectly free, and pressure from above downward or from behind forward caused no pain. There was a marked constriction of the ribs in front, extending from the fourth to the seventh. The prominence of the cartilages (Rosencranz) was marked in the upper ribs. The knee-joints were slightly enlarged, but the other joints were normal.

The apex-beat of the heart could be felt at the lower border of the tenth rib and a half-inch to the left of the nipple. The heart boundaries were: upon the right side, the inner border of the sternum; superiorly, the fourth intercostal space; and externally, the mammillary line. The tricuspid sound of the heart was absolutely normal and distinct; the mitral was also normal, but not so distinct; the aortic could not be heard on account of the exaggerated respiratory murmur. The pulmonary second sound only could be heard. There were no heart-murmurs. The pulse was 54 per minute.

Normal bronchial breathing could be heard over the entire chest, except that it was exaggerated. The percussion note was normal. The respirations numbered 54 per minute.

The spleen seemed somewhat enlarged; however, the apparent enlargement may have been due to downward displacement caused by chest constriction. The liver-dulness commenced at the sixth rib. There was no evidence of any pathologic condition of the kidneys.

The mother of the child is a native of Germany, forty-three years old, large, and somewhat fleshy. She states she has always been healthy, except for a period of time during her youth, when she was troubled considerably with sore-throat, and at the age of fourteen she had a "nervous fever," from which she lost her hair. She never had a skin-eruption, and there are no symptoms of tuberculosis. She has given birth to twelve children. The first lived five days; the second, four months; the third, three months; the fourth and the fifth are living and in perfect health; the sixth lived six months; the seventh was born dead at term; the eighth was born dead; the ninth is living and in fair health; the tenth was born dead; the eleventh is living, and the twelfth is our patient.

The father is also a German, fifty-three years of age; he is small and slight in stature and weak. He has had three attacks of inflammation of the lungs; he has never had sore-throat, loss of hair, skin-eruption, or any other symptom of syphilis.

The very remarkable and interesting point to be observed in this case is that the heart-contractions and the inspiratory acts are absolutely synchronous, each 54 a minute—a very rapid respiration and a very slow pulse. I have searched the literature in vain for a similar case, and I am convinced that it is the only one of its kind on record.

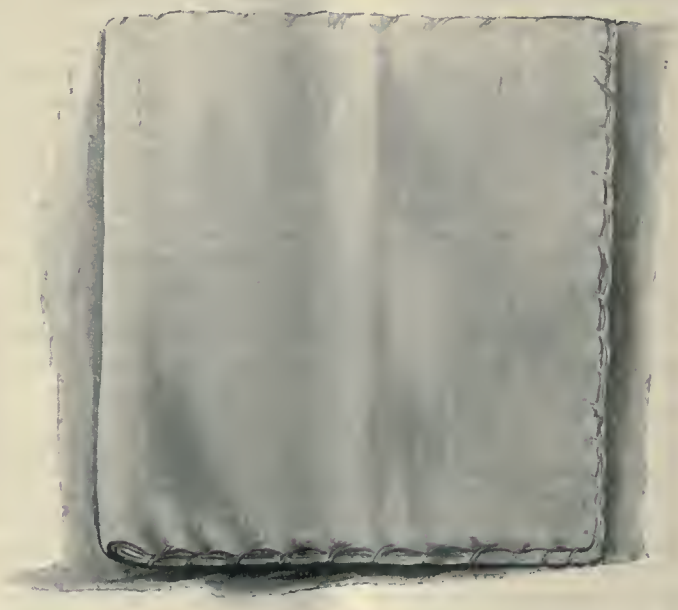
The child was presented to me in the summer of 1888, during my service at the Chicago Polyclinic. He remained in the same condition until his death, which occurred in July, 1890, at a time when I was absent from the city on a vacation. The parents state that he was suddenly seized with a "fit," which was rapidly followed by others, and death resulted in less than three hours. Unfortunately, no post-mortem examination was made; whether it would have furnished an explanation of the singular pathologic condition is, of course, a question.

PADS OF ABSORBENT GAUZE AS A SUBSTITUTE FOR FLAT SPONGES IN ABDOMINAL SURGERY.

BY WILLIAM EASTERLY ASHTON, M.D.,
GYNECOLOGIST TO THE PHILADELPHIA HOSPITAL.

IN this era of surgical progress, when success so much depends upon technique and care, the aim of all operators must be to render their operations as simple as is conformable with the well-defined and strict laws of asepsis. With this object in mind, I desire to call attention to gauze pads as a substitute for flat sponges in all forms of abdominal and pelvic surgery.

The pads are made of the ordinary unsized absorbent gauze in use in all hospitals for surgical dressings. I employ two sizes: a large pad, 9 inches square, which is used in abdominal work, and a small one, 4½ inches square, for pelvic cases. Each pad is composed of sixteen layers of gauze, folded together in such a manner that the edges cannot fray. The large pad is made as follows: A single layer of gauze a yard square is folded at each extremity upon itself, so that the folds meet at the middle. This makes two layers of gauze, oblong in shape, the extremites of which are now folded over so that they meet in the midle. There are now four layers and the shape of the pad is square. This is then folded upon itself, making again an oblong pad, having eight layers.



Folding it once more upon itself, the pad is then composed of sixteen layers and measures 9 inches square. To keep the pad in shape and the layers from becoming separated the edges are stitched together with ordinary sewing cotton. The small pad is made in a precisely similar manner, except that a piece of gauze 18 inches square is used.

The advantages of these pads over sponges are very great. Flat sponges are not only expensive, but it requires great care and trouble to render them aseptic.

Again, they can be used only a few times, as the chemical processes through which they must pass in cleaning after an operation render them rotten and unfit for use. Indeed, it is a serious question—one that for myself I have long since decided in the negative—if a sponge should ever be used a second time in abdominal work. Certainly, the best results are obtained in this branch of surgery by those operators who are extravagant in the use of their materials and who never use ligatures or sponges left from a previous operation. Finally, sponges necessarily swell when brought in contact with fluids, and consequently they do not remain well in the position in which they are placed. On the other hand, gauze pads are inexpensive, the material costing only 2¾ cents a yard; they are readily made, and easily rendered aseptic by simply placing them in a steam sterilizer for forty-five minutes prior to using them. Again, they remain well in place, as they retain their shape perfectly and are much easier to pack about the seat of operation than are sponges.

A CASE OF LONGITUDINAL FRACTURE OF THE PATELLA.

BY A. H. FRASER, M.D,
LICENTIATE OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH,
OF HARPER, KANSAS.

THE literature concerning fractures of the patella other than transverse is so meager that a case of longitudinal fracture becomes one of interest and importance. Dupuytren only met with four cases, and Hamilton, in his book on *Fractures*, gives 127 cases wherein the knee-cap was fractured, 106 being transverse, some oblique, stellated, and comminuted, but longitudinal fractures are not mentioned.

On the night of September 19th last, I was asked to see a case of gunshot wound of the left knee, with my friend, Dr. W. G. Muir, of Harper. The patient was a young man, twenty-four years of age; there was an external wound one-eighth of an inch to the outer side of the middle line of patella; the bone was split into two almost equal parts; the bullet, having taken a downward and slightly outward direction, was found just below the outer head of the femur, lying transversely and at right angles to the shaft of that bone. The injury took place at very close quarters, the patient's right wrist being burned by the powder while endeavoring to turn aside his assailant's pistol. It seems almost incredible that a man could run after receiving an injury such as that described, but the fact remains that he not only did not fall, but also ran a distance of fifty yards at a good pace; it may be that "fear lent him wings." A second shot was fired at him as he ran, and grazed the lower edge of the right buttock, but only had the effect of accelerating his speed. The patient being fully placed under the influence of chloroform, the original wound was somewhat enlarged and an attempt was made to seize the bullet with a pair of forceps, but it was found that the detached outer fragment was too much in the way, and the bullet could be felt just above the outer tuberosity of the tibia; an incision was made over that point, and a 38-caliber revolver bullet removed. The limb was kept extended; the edges of the fractured patella were brought firmly into apposition, and retained by means of adhesive plaster; after being washed out with warm carbolic lotion, a drainage-tube was inserted into the lower wound, which was dressed with iodoform and dry cotton, the whole being enveloped in a figure-of-eight bandage. Uninterrupted recovery took place; the upper wound healed by first intention; there was no rise of temperature; there was extraordinary freedom from pain.

The joint was daily syringed out with warmed carbolic lotion; the drainage-tube was removed on the tenth day—there being less than two teaspoonfuls of pus in the whole course of the case. Three weeks after the injury the patient was up and going around on crutches. I had an opportunity of seeing the case three months afterward, when perfect bony union had taken place; the man could bend one knee as well as the other, and walked without any limp and quite unaided by an artificial support of any kind. In all probability, had a man received an injury to the knee-joint such as is here recorded involving the knee-joint and destroying the bursæ, twenty years ago, it would have been considered a fit case for amputation; whereas now, with antiseptic dressings and thorough cleanliness, the whole thing is healed up within three weeks.

MEDICAL PROGRESS.

Unusual Phenomena of Epilepsy.—In an interesting address, WILKS (*British Medical Journal*, No. 1618, p. 2) reports a number of unusual phenomena observed in connection with epilepsy, the significance of which might readily escape the unobservant. He takes the view that the association of loss of consciousness, convulsions, and coma is not an essential feature of the disease. In some cases, there is only a strange feeling in the limbs or a sudden pain in some part of the body; in others, there is an aberration of the senses or a perturbation of an important organ; sometimes there is only a strange mental disturbance. Sometimes, the aura constitutes the main symptom of the attack; suspicion should be aroused if a patient complains principally of a sore tongue. There may be aberration or confusion of mind, the patient committing acts of which he subsequently has no recollection. The special senses or motility may be transitorily impaired or lost. In some cases, coma or sopor may be the only discoverable manifestation. Sometimes it would appear as if the attack were long drawn out—that is, instead of being shock-like and intense, it is protracted in duration and correspondingly mild in intensity. Wilks is averse to admitting any relationship between epilepsy and migraine. In his experience, the one does not replace the other; nor are both common in the same family. In the one, the onset is sudden, with convulsions, dilated pupil, congestion, and often, heat of body; in the other the onset is gradual, with contracted pupil, cold skin, and sickness. According to the observations of Wilks the epileptic does not suffer from headache.

Hysterical Mutism with Agraphia.—COURMONT (*Revue de Médecine*, 1891, No. 10, p. 895) has recorded the case of a man, forty years old, who, at twenty-two, after excitement, lost consciousness for thirty hours, and for twenty-four hours subsequently could not speak, but laughed constantly. Recovery took place in the course

of several days. On arising one morning, when thirty-two years old, the man found that he could move his left arm and leg only with difficulty. The condition improved in the course of a few days, but subsequently some degree of weakness of the left side was from time to time observed. Six months before coming under observation, there had been temporary loss of speech. Four months later, the occurrence was repeated, the face and tongue then deviating to the left. The condition disappeared in the course of a day. A month before the man presented himself, he again lost the faculty of speech, though he retained the ability to write. At the end of two weeks, speech returned for two days; then both faculty of speech and ability to write were lost. By gesture the patient indicated the existence of pain in the head, especially at the upper part of the left temporal region. He comprehended written and spoken language. There were thus no word-deafness and no word-blindness. The patient could neither transcribe nor write by dictation. There was no palsy. There was slight anesthesia upon the left side. The right field of vision was normal; the left was diminished about one-half. On the night after coming under observation, the condition spontaneously disappeared, and on the following day the man could talk volubly.

Perforative Aortitis.—OLIVER (*Lancet*, No. 3558, p. 1033) has recorded the case of a man, aged thirty-six years, who thirteen years previously had an aggravated attack of rheumatic fever. Murmurs indicative of the existence of aortic obstruction and incompetency, of mitral incompetency, and of pericarditis were heard and the heart was hypertrophied. Some time later the patient rather suddenly died. At the autopsy, the pericardium was found occupied by a clot entirely surrounding the heart. The heart itself was dilated and hypertrophied. The mitral orifice was dilated, the valves normal. The aortic valves were incompetent. The aorta, just beyond its origin, presented a pouch-like dilatation. Over a small area between the mouths of the coronary arteries, extending upward for about an inch and a half, the lining membrane of the aorta was red, softened, and ulcerated, and in two places gangrenous. From the center of this area a small pouch bulged outward. The walls of the pouch were thin and soft, and perforated at its base by an opening as large as the head of a pin. An atheromatous plate lay close to the orifice of the left coronary artery. Microscopic examination confirmed the macroscopic evidences of the existence of an ulcerative aortitis, and disclosed in addition the presence at the focus of inflammation of considerable numbers of bacilli resembling those of anthrax. There was no history or knowledge of infection.

A Needle in the Trachea.—At a meeting of the Laryngological Society of Berlin, SCHORLER (*Berliner klin. Wochenschrift*, 1891, No. 44, p. 1079) presented a tailor who, while at work, had drawn into the trachea a threaded needle that he was holding in his mouth. The protruding threads were secured by an additional thread, and attempts were made to withdraw the foreign body, but without success. On examination with the mirror, the needle was found impacted in the trachea at its bifurcation, one extremity being deeply imbedded in the walls of the trachea, and the other being caught below a ring of cartilage on the opposite side. As the patient began to display signs of fatigue, and as the symptoms were not threatening, further manipulation was postponed to the following day. Repeated attempts at removal failing, a laryngeal sound with a hook-like extremity was introduced, for the purpose of dislodging the needle. A little manipulation released the foreign body, which was then readily withdrawn. In the course of three or four days the patient was restored to his usual condition.

Treatment of Diphtheria.—SMITH (*The Practitioner*, No. 282, p. 430) has successfully employed carbolic acid by continuous inhalation in seventeen cases of diphtheria. He ascribes the good results largely to the method of application. The patient is placed in bed, lightly clad and made to maintain the recumbent posture. Over him is placed a tent, made of a sheet, closed on all sides except in front. Cloths, about a foot square, soaked with a mixture of carbolic acid, one part, oil of eucalyptus, one part, and turpentine, eight parts (or less, according to indications), are hung about the patient, while the surrounding air is constantly kept impregnated with the vapor of steam. The cloths are to be re-soaked as they become dry. The patient should breathe through the mouth. If necessary, the nostrils may be loosely plugged with cotton-wool. The inhalations do not counter-indicate the employment of other therapeutic measures. Should there be depression, alcohol, digitalis, belladonna, or ammonia may judiciously be administered.

Distinctions Between the Bacillus of Typhoid Fever and the Bacillus Coli Communis.—At a meeting of the Société de Biologie, DUBIEF (*La Médecine Moderne*, No. 43, 1891, p. 745) reported that in making comparative experiments with the bacillus of typhoid fever and the bacillus coli communis, he found that both organisms caused the fermentation of glucose in about equal degree, the colon-bacillus, however, giving rise to the formation of a larger percentage of lactic acid. In consequence of this difference, the typhoid-bacillus but slowly causes the coagulation of milk, while the colon-bacillus produces the same result more speedily.

Before the Académie de Médecine, ROUX and RONDET (*La Médecine Moderne*, 1891, No. 43, p. 741) maintained the identity of the bacillus coli communis and the bacillus of typhoid fever. The apparent differences that exist are considered as dependent upon the varying conditions to which the organism may be exposed.

Pyoktanin in Ophthalmic Practice.—As a result of the employment of pyoktanin for a period of three months in the ophthalmic service of Bacchi, RESCOUSSIE (*Annales de la Policlin. de Paris*, 1891, No. 12, p. 549) concludes that the agent is an excellent antiseptic in ocular surgery—to be preferred to all others. It exercises a favorable influence upon simple conjunctivitis, and especially upon granular conjunctivitis. It is of doubtful efficacy in case of rebellious ulceration of the cornea, and is almost useless in case of purulent ophthalmia.

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"INFECTION" OR "CONTAGION?"—A QUESTION OF DEFINITION.

ASK anyone that has not previously made a special study of the matter, what is understood, or what should be understood, as the distinctive difference of definition between the two words, "infection" and "contagion," and it will soon be discovered that he has either no clear opinion, or an erroneous opinion about it. Then, go to the dictionaries, and it will be found that no distinction exists, or that an attempted distinction, either in logic or in fact, does not hold.[1] This is unfortunate and confusing. If the two words are identical in meaning, one is unnecessary, and should fall into disuse. But everybody has a

[1] To illustrate the unfortunate contradictions and indefiniteness of lexicographers and writers we append several excerpts:

INFECTION: The act or process of infecting, formerly applied to communication of disease without personal contact; now often used as synonymous with contagion, but is usually understood to refer to things rather than to persons. A disease is said to be infectious when it can be communicated to another person. CONTAGION: The process by which disease is transmitted. If by direct contact, it is called personal contagion. If indirect, it is often called infection. CONTAGIOUS: Capable of communication from one person to another, either by actual contact or through the air.—BILLINGS.

CONTAGION: The communication of disease from one individual to another by means of direct or mediate contact, or, as used by some writers (in the sense of infection), by effluvia, etc. 2. The material cause or virus of a contagious disease. INFECTION: The act or process by which disease is set up in an organism by the implantation of morbific germs from without, or in a part of the organism by the conveyance of such germs from another part. Infection differs from contagion in the fact that the germs are not necessarily transferred from another organism, and, as used by some writers, in the further fact that when they are, contact of the two organisms is not requisite.—FOSTER.

INFECTION is often used in a definite and limited sense, of the transmission of affections without direct contact of individuals or immediate application or introduction of the morbific agent, in contradistinction to contagion, which then implies transmission by direct contact.—WEBSTER.

INFECTION: Communication of some quality, property, or state, whether good or bad, by contact, diffusive, or emanative influence, example, etc. The communication of disease or of disease-germs, whether by contact with a diseased person, or with morbid or noxious matter, contaminated clothing, etc., or by poisonous exhalations from any source.—THE CENTURY.

INFECTIOUS: Communicable by infection; easily diffused or spread from person to person or from place to place, as a disease, a moral influence, or a mental condition; specifically applied to diseases which are capable of being communicated from one to another, or which pervade certain places, attacking persons there, independently of any contact with those already sick. Infectious diseases include contagious and miasmatic diseases.—THE CENTURY.

A distinction between contagion and infection is sometimes adopted, the former being limited to the transmission of a disease by actual contact of the diseased part with a healthy absorbent or abraded surface, and the latter to transmission through the atmosphere by floating germs or miasmata. There are, however, cases of transmission which do not fall under either of these divisions, and there are some which fall under both. In common use no precise discrimination of the two words is attempted.—THE CENTURY.

From an early period it has been observed that certain diseases are contagious or "catching," by direct contact with the sick person, or by means of clothing or buildings, which transmit the *materies morbi*. When actual contact took place the disease was called "contagious"; when it was transmissible by the air, it was given the wider name of "infectious."—FAGGE'S *Practice of Medicine*.

Dr. T. Mitchell Prudden defined the word "contagion" as an "invasion and reproduction within the body of pathogenic organisms." It was not necessarily an invasion by bacteria, because other organisms may be elements of contagion, as, for instance, in malaria. It was encouraging to note that the word "contagious" no longer refers to infinite possibilities in the unknown, for the contagium in an infectious disease is the particular pathogenic microörganism itself, whose advent in the body ushers in those reactions of the body cells that we call the disease; and an infectious disease is contagious when the contagium, under the ordinary conditions of life, can be freed from the body of a diseased person and be conveyed to the body of another, in such a condition as to be able to reproduce the disease in this second individual. Hence, the old distinction between contagion and infection has become impracticable and valueless, as it is now known that the communicability of an infectious disease is largely dependent upon the physical properties of the contagia, which determine the manner in which they are spread from body to body or from place to place. The common conception of a contagious disease is one which taints the atmosphere surrounding the patient, but this is not true of any of the ordinary diseases except the exanthemata. Thus, typhoid fever, diphtheria, and tuberculosis may be highly contagious, depending upon the care or lack of care taken in disposing of the exudates and discharges. —*New York Academy of Medicine*, January 21, 1892. (See THE MEDICAL NEWS, February 6, 1892, p. 164.)

more or less vague idea that some difference of meaning does exist, at least in the minds of the learned, but that the ordinary mortal has not succeeded in grasping it. The simple fact, however, appears to be that certain writers have endeavored to make distinctions of different kinds, but that such distinctions have not been univesrally accepted. Hence the general mystification.

This unfortunate haziness of mind in part arises from the patent fact that Science is not clear as to the means of communication of the diseases vaguely classed as specific, infectious, contagious, or zymotic. The difficulty of definition of terms is, in part, due to our incertitude as to facts; we do not know whether the specific viruses of certain diseases are transmissible only by direct contact, or also by certain intermediate agents, and moreover, by just what agents. There is also doubt whether certain diseases are due to a chemic or to a living agent or cause; and, finally, there is or may be some doubt as to whether or not a pathologic condition is purely idiopathic or non-transferable.

It is probable that this lack of certainty as to specificity or transmissibility of disease will long and possibly forever persist. In the meantime it is extremely important that clearness be provisionally attained by attaching such precise definition to terms as will make mutual understanding quickly possible, and that yet shall not bias the mind or make future changes and reversals of meaning necessary. The scientific world is now in a tangle of absurd misunderstanding as to the meanings of the terms ptomaïne, leucomaïne, toxalbumin, toxin, etc., all because the early nomenclature falsely presupposed certain questions of etiology, etc., as scientifically settled. Our naming of new facts should be as loose and large—as colorless and pliant as possible. The nomenclature should not enslave the facts or be inconsistent with new facts that may in time upset old theories. Had this rule been followed, it would not be true, as it now is, that a ptomaïne may be a leucomaïne, and *vice versa;* that a toxalbumin may not be an albumin at all, etc. (See editorial, THE MEDICAL NEWS, July 18, 1891.)

It may be said that the best way to avoid the trouble about the words *infection* and *contagion* is to drop one of them. The rub is that words refuse to die or to be born and live according to any dictum. The best-formed and most-needed of words will come into the world still-born, and all the labors of the philologic doctors with artificial respiration cannot bring about natural respiration. Conversely, the most execrable of philologic hybrids and teratologic absurdities will live and grow despite all attempts at asphyxiation and overlaying. The best we can hope to do in the latter case is to educate the youngster. As regards the two words under discussion, it appears like a case of rival twins competing for the right of primogeniture.

Etymologically the word *contagion* implies contact, touching, physical taking by one person from another of the *materies morbi.* But, of course, even that act may have a multitude of methods and degrees, and when a closer scrutiny is attempted there is found to be no essential difference between receiving the pathogenic matter from another by touching him, or the things that he has touched, and the transfer of the matter by a fly, by water, or by wind. The innumerable methods whereby the pathogenic material may be carried make it impossible to devise a nomenclature that shall express each variety of transfer. And yet it is precisely this idea of the method of transfer that has introduced the confusion complained of, and that makes it desirable to delimit the significations of the two words.

So far as we have now reached, it becomes most desirable to determine whether pathogenic material may be transported by the air or not. In the prophylaxis of disease this is an extremely important point. If, *e.g.*, pathogenic material may be transmitted through the air it is of the greatest importance to know the fact; but if not, then preventive measures are more easily instituted and made effective.

The word infection is, etymologically, not rigidly physical in its significance, and, in actual usage as well as in figurative meaning, it has the significance of more subtle and mysterious processes than those of the physical contact implied by the word contagious. May we not act upon this hint and conveniently limit the word *contagion* to those germs or that material not transportable by the atmosphere, and *infection* to that material that lives and is conveyed by aërial currents? Such a practice would permit both words to be used, but would give to each a distinct province and application, and thus avoid the present misunderstanding and confusion. Typhoid fever (unless the germs are later to be proved conveyable by air-currents) would thus

be a contagious, but not an infectious, disease; ague would be infectious, but not contagious; while tuberculosis would be both contagious and infectious, etc.

The objection to this suggestion that arises is that we are left without a generic term applicable to all diseases whether contagious or infectious. But, zymotic is such a word, with the widest significance and correctness of application.

Without some such limitation and definition as the foregoing we shall have to drift on, with the three words contagious, infectious, and zymotic, indiscriminately used, erroneously supposed to have differences of meaning, and giving rise to constant misunderstanding and mystification.

TWO METHODS.

To a physician of Philadelphia, widely known and greatly honored, an enterprising firm of dealers in wine lately sent a most lavish and costly case of "samples" of their "medicinal" beverages. The enterprising firm was thanked, and politely informed that the present had been re-presented to ——— Hospital.

Another physician writes an effusive and laudatory letter in praise of the wine, as regards its prophylactic and curative properties in disease, and this letter will doubtless be poked under the nose of every one of us for years to come.

In certifying to the superior excellences of one special preparation, it goes without saying that as a scientific man the physician has made impartial scientific analysis and tests of all competing preparations of the kind, and chemically, physiologically, and therapeutically is disinterestedly certain that the one he pronounces the best is really so. If he has not done so his certificate is a farce and he has unjustly discriminated against other preparations, possibly equally as good, the makers of which trust to the qualities of the preparations rather than to sly advertising dodges. But whatever the fact, either he has been foolish enough to give a valuable thing for nothing, or he has had value received for the puff.

SELECTION.

OUT-PATIENT REFORM.

The Great Northern Central Hospital, on establishing its new buildings in the center of the northern districts of London, found it necessary to rid its out-patient department of some of the evils that are usually comprised under the name of "hospital abuse." These evils, briefly stated, consist in the overcrowding of the departments, and in the presence among the patients of (1) persons whose position and weekly earnings render them well able to pay for treatment at their own homes; (2) persons who are suffering from chronic and trivial ailments; and (3) persons who, being members of clubs or of provident dispensaries, are already provided with means of medical aid in case of sickness. To eliminate these component parts of the crowd and to relegate them to their respective positions has been the aim of many schemes of out-patient reform in London as well as in some of the large towns in the United Kingdom. The experience thus gained has abundantly illustrated the truth of the saying that men cannot be made moral by Act of Parliament. No system has yet been devised that, depending for its success on the good feeling or the moral sense of the masses, has as yet fully achieved its object. The Great Northern Hospital system has been so framed as to be, for the most part, independent of the moral obliquity of individuals. It consists essentially of a system of inquiry into the circumstances of all applicants for relief and the refusal of all that exceed a definite wage limit laid down by the hospital authorities. All cases are further made to pass through the hands of a qualified casualty officer, who is required to be a resident in the neighborhood of the hospital, and by him the trivial cases are separated from the cases of real disease or injury. No case is refused first aid, but all cases refused further treatment under the wage limit are offered a form of certificate that, if they can get signed by their own physician, entitles them at their next visit to be registered as regular out-patients. The working of the scheme is controlled by a mixed medical and lay subcommittee that is responsible for all of the acts of the inquiry and casualty officers. In any case of doubt as to the truth of a patient's statements the subcommittee is empowered to institute inquiries at the patients' own homes. The objects of the Great Northern Hospital Committee have thus been threefold. While protecting the funds of the hospital from misapplication, it has also borne in mind the interests of the local practitioners, and has further rendered the labors of its own honorary medical officers less onerous and more effective by the system of preliminary medical inspection. The patients themselves receive treatment in accordance with their requirements, and although the scheme may be objectionable in the eyes of the few upon whom it operates, it would appear to be popular with those whom it protects. It is worthy of note that a form of voluntary pay system was for a long time in vogue at the Great Northern Hospital, and that it failed signally to check the ordinary forms of abuse. The practitioners in the neighborhood of the hospital rose up in arms against it, and at the instance of its own medical officers the committee withdrew it. Pay systems, as established at Guy's Hospital, the Queen's Hospital, Birmingham, and elsewhere, whether accompanied by inquiry, or whether put on the same footing as at the provident dispensaries, are, and must be, liable to abuse. Rigid and regulated inquiry would seem to be the only effective means of detecting such abuse, but unless universally adopted will only have the effect of driving unscrupulous persons from one institution to

another. Combined action, as attempted among certain of the Manchester medical charities, or by the agency of the Charity Organization Society, would probably prove the most economical method, but it is open to question whether the more effective results would not be obtained if every hospital protected its own interests as the Great Northern Hospital has done.—*Brit. Med. Journ.*

REVIEWS.

Physical Diagnosis. A Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P. Ed., Lecturer on the Principles and Practice of Medicine in the Edinburgh Medical School, etc., and William Russell, M.D., F.R.C.P. Ed., Pathologist to the Royal Infirmary of Edinburgh, etc. With one hundred and one illustrations. 8vo, pp. 376. New York: D. Appleton & Co., 1891.

The importance of diagnosis in the practice of medicine is amply testified to by the large number of books on the subject, of which there are many that are good. The diagnosis of disease is a most interesting subject, calling into play, as it does, the highest intellectual activity in conjunction with the broadest knowledge, in the face of which conditions apparently complex become reduced to their elementary simplicity. Based upon definite principles and accumulated observation, it is an exact study, attainment of proficiency in which depends upon careful training and unlimited experience.

Diagnosis depends upon a correlation of the physical signs and the symptoms. Careless observation or false reasoning may each lead to wrong conclusions. To prevent such untoward consequences the student should be instructed in the best methods of conducting clinical investigation, and he should understand the significance and the mechanism of the results of such investigation. The book of Dr. Gibson and Dr. Russell is well calculated to meet the indications. It is clearly written, in an easy and agreeable style. Well-executed illustrations are introduced when necessary to elucidate or to amplify the text. It is only natural that here and there statements are made that will not find universal acceptance, that certain information is presented that it might be thought were well omitted, and that other facts are omitted that it may be thought it were better to have presented. It is stated that the precordia is normally slightly bulged as compared with the corresponding part of the thorax on the right side. We have found it far from usual that the precordia bulged appreciably, even in cases of hypertrophy of the heart. We are glad to see it stated, without qualification, that a mitral systolic murmur may occur "when there is no disease of the valve, but when the ventricle is dilated and enfeebled; then either the orifice is dilated, so that the cusps are to small too close it, or the muscle, owing to weak action, does not sufficiently contract the orifice to enable the valve to close it." To say that "in many cases of mitral stenosis, neither a diastolic nor a presystolic murmur is present, and yet the diagnosis may be made with practically absolute certainty" is to make rather a positive assertion the acceptance of which will depend upon post-mortem confirmation. Less than five pages are devoted to a consideration of the blood. The differential characteristics of the blood in anemia, chlorosis, pernicious anemia, leukemia, and pseudo-leukemia are not given. Among the microparasites of the blood the malarial organism is not mentioned. The chapter devoted to the urinary system is good and full, but no reference is made to the reaction of the urine in case of enteric fever to sulphanilic acid and sodium nitrite.

On the whole, the book can be safely entrusted to the hands of the student with the assurance that it will prove of real service.

Pulmonary Tuberculosis, Etiological and Therapeutic. Based on an Experimental Investigation. By R. W. Philip, M.A., M.D., F.R.S.E. 8vo, pp. 55. Edinburgh and London: Young J. Pentland, 1891.

The observations upon which this essay is based were begun in 1885. Premising his investigations by accepting the etiologic agency of the bacillus tuberculosis, Philip found that subcutaneous injections of an alcoholic extract of the pure sputum of unequivocal cases of pulmonary tuberculosis into cold-blooded and warm-blooded animals were invariably followed by symptoms of depression of the voluntary motor system, anorexia, and wasting, the action of the heart being slowed, with relative prolongation of the diastole. By the administration of atropine the effects of the injections were completely neutralized.

For therapeutic purposes pulmonary tuberculosis is divided into three stages: 1, a catarrhal or pretuberculous stage; 2, the stage of invasion, and 3, the stage of elaboration and absorption. In the first stage, the treatment must be prophylactic; especially is pulmonary exercise to be encouraged. In the second stage the treatment must be tonic and constructive; it is not necessary to attempt the destruction of the tubercle-bacillus; it suffices to render the soil unfavorable for its development. For this purpose "the group of bodies represented by eucalyptol, turpentine, terebene, copaiba (and perhaps creasote)," has proved useful. For two or three years Philip has advantageously employed pure oil of eucalyptus globulus, from ten to thirty minims, three or four times a day, conjoined with intra-tracheal injections of from a twenty to thirty per cent. solution of eucalyptus oil in olive oil or other bland menstruum. In the third stage of the disease, belladonna, or its alkaloid atropine, pushed to its physiologic effects, is indicated and has yielded satisfactory results.

Prescriber's Pharmacopeia. A Synopsis of the More Recent Remedies, Official and Unofficial, with a Therapeutic Index and a Résumé of the B. P. Additions, 1890. By a Member of the Pharmaceutical Society of Great Britain. Second Edition (revised reprint). Pp. 429. Bombay: Kemp & Co., Limited, 1891.

This booklet is a creditable compilation of the medicinal agents in more common and universal employ. It is based principally upon the British Pharmacopeia, though it contains not only preparations to be found in the British Pharmacopeia but also many recognized by the Indian, the German, and the United States Pharma-

copeias, as well as articles that have not received official recognition. The names of medicaments are arranged alphabetically. The qualities and properties, as well as the therapeutic indications of the representative of a class or of individual members of a class are presented, together with the chemical symbols or formulæ, the dosage, and in suitable cases with the antidotes and the incompatibles. An appendix contains the recent additions to the British Pharmacopeia and a consideration of the subjects of hypodermatic medication, pills, and urinalysis; it also contains other tests, a therapeutic index and a general index.

We are disposed to adhere to the standard works on materia medica and therapeutics, but we must admit that books like this Pharmacopeia possess a certain value in bridging over a period until new editions of standard works to conform to pharmacologic and pharmaceutic advance can be prepared. The completeness of the book and the evidence of carefulness it presents are praiseworthy.

TABLES FOR DOCTOR AND DRUGGIST. (Comprising: I. Table of Solubilities. II. Table of Reactions and Incompatibles. III. Table of Doses and Uses of Medicines. IV. Table of Specific Gravities. V. Table of Poisons and their Antidotes.) Compiled by ELI H. LONG, M.D., Professor of Materia Medica, Buffalo College of Pharmacy; Adjunct Professor of Materia Medica, Medical Department, University of Buffalo. Detroit: George S. Davis, 1891.

THIS is one of the most useful reference books which has come into our hands. The object of the compilation, which, as stated in the preface, is "to bring into convenient form for ready reference information that is wanted daily by the physician and pharmacist," has been admirably carried out. The Table of Reactions and Incompatibles constitutes the distinctive feature of the work. "It is not intended to be a technical guide for the chemist, but is arranged rather with a view to the practical needs of the practitioner." The Table of Doses and Uses is quite complete, and, so far as appears upon casual perusal, correct. The Table of Poisons and their Antidotes is also worthy of commendation; it is much fuller than the usual run of such tables. We regret to note, however, a number of serious omissions in the list of antidotes. Atropine and magnesium sulphate are both omitted from the list of antidotes of carbolic acid; amyl nitrite is not found in the memorandum of treatment of carbolic acid poisoning. In the treatment of strychnine poisoning, the importance of quiet and of the evacuation of the bladder has been forgotten. Nitrite of amyl might also well have been mentioned here.

MANUAL OF PHYSICAL DIAGNOSIS FOR THE USE OF STUDENTS AND PHYSICIANS. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the University Hospital, etc. 8vo., pp. 136. Philadelphia: P. Blakiston, Son & Co., 1891.

DR. TYSON has disarmed criticism as to the necessity for a new work on physical diagnosis by giving expression in his preface to the hope that his book may facilitate the teaching of the subject to his classes—and this object the book is admirably calculated to fulfil. The work contains a clear and concise description of the various phenomena elicited by physical exploration of the lungs and heart, in health and disease, based upon the results of a large and extended experience, during many years, in the employment of approved methods, and in the trial of proposed innovations. It is, however, to be regretted that a portion of the work was not devoted to a consideration of the information concerning diseases of the liver, spleen, kidneys, and other abdominal viscera to be gained by physical investigation. The results derived from physical exploration of the abdominal viscera are small as compared with those derived from physical exploration of the thoracic organs, partly because both subjects have not received the same degree of attention. The very obscurity of diseases of the abdomen should constitute a stimulus for the enlargement of our knowledge of the phenomena to be elicited by physical examination, and of the significance of those phenomena, so as to render more easy the recognition of those diseases.

DIAGNOSIS AND TREATMENT OF HEMORRHOIDS AND OTHER NON-MALIGNANT RECTAL DISEASES. By W. P. AGNEW, M.D. Second Edition. Pp. 148. San Francisco, California: R. R. Patterson, 1891.

IN addition to a consideration of the subject of hemorrhoids, to which this little work is largely devoted, the following subjects are briefly discussed *seriatim:* Rectal examinations, fistula in ano, ulcer, stricture, fissure and prolapse of the rectum, rectal pockets and papillæ, pruritus ani, divulsion of the sphincter ani, rectal polypi, proctitis, flushing the colon, reflex manifestations of rectal disease, condylomata, and neuralgia of the rectum. In an appendix, carbolic acid, cocaine, and the aspiration of hemorrhoids, are cursorily considered, and a few formulæ are added. The author is an advocate of the treatment of hemorrhoids by means of injections of carbolic acid. He employs a formula containing four drams of tannic acid carefully dissolved in an ounce of glycerin. To the solution two drams each of salicylic acid and sodium biborate are added. If there be any sediment the solution should be strained. Then to half an ounce of crystallized carbolic acid, liquefied by the addition of fifteen minims of distilled water, sufficient of the solution first prepared is added to make two ounces. From three to four minims are injected, in accordance with the size of the hemorrhoids.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Sixth Session, held at Washington, D. C., September 22, 23, 24, and 25, 1891. Volume VI. 8vo, pp. 319. Philadelphia: Printed for the Association, 1891.

AS the readers of THE NEWS have already been presented with a full report of the proceedings of the sixth session of the Association of American Physicians, and have had an opportunity of reading so many of the papers contained in the *Transactions*, extended review is uncalled for. We dare only refer to the beautiful tribute to Leidy made by the President in his opening address; to the original paper of Roosevelt on "The Frequency of the Localization of Phthisis Pulmon-

alis in the Upper Lobes;" to the advanced position taken by Delafield in suggesting a rational nomenclature for the "Diseases of the Kidney, Popularly Called Bright's Disease;" to the scholarly papers on "Arterial Disease," by Peabody and by Councilman; to the classical essay of Fitz on "Intestinal Perforation in Typhoid Fever." The *Transactions*, as a whole, reflects credit upon the Association.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book Specially Adapted for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., etc. Third Edition. Philadelphia: Lea Brothers & Co., 1891.

Among the many works on chemistry offered for the use of the medical student, there is probably none that outrivals Dr. Simon's work in practical arrangement and thoroughness. A special feature of the book, and one that deserves the greatest praise, is the presence therein of the beautiful colored plates representing fifty-six chemical reactions. To say that they are splendidly and artistically executed hardly does them justice. They must convey to the mind of the student lasting impressions of the color-changes that he has noted in his experiments in the laboratory, and the perusal of this work must recall them vividly to recognition. The many cuts are well selected, and the make-up of the book leaves nothing to be desired. As a student's manual this work is of the highest order.

The Physician as a Business Man; or, How to Obtain the Best Financial Results in the Practice of Medicine. By J. J. Taylor, M.D. Pp. 144. Philadelphia: The Medical World, 1891.

Dr. Taylor has admirably presented the commercial obligation of the community to the practitioner of medicine, and in so doing he has not failed to show the dereliction of the community. The subject is a well-worn one; it is none the less a live issue. The physician holds a unique position. As his relations to his clients are confidential, so does he depend upon the honor of those clients to grant him proper remuneration. To derive a proper inspiration for his work, the physician must be an optimist. He is a poor business man, if striving for gain at the expense of others constitutes good business. Dr. Taylor has indicated some of the ways in which the physician can protect himself against deception and imposition, he has laid down certain general business principles with which physicians should be familiar or which they can advantageously follow. The book can be profitably read by physicians and others.

The Rational Cure of Deafness and Discharge from the Ear. By Samuel Sexton, M.D., assisted by Alexander Duane, M.D. 8vo., pp. 89. New York: J. H. Vail & Co., 1891.

This brochure sets forth most satisfactorily the "modern treatment for the radical cure of deafness, otorrhea, noises in the head, vertigo, and distress in the ear." This treatment consists in excision of the membrana tympani and the two larger ossicula, stiffened and ankylosed as they are in chronic catarrh of the middle ear, and excision of the diseased remnants of the membrana and necrotic ossicles in chronic purulent otitis media. This operation is new in aural surgery, and brings about good results in cases heretofore considered irremediable. We hail the brochure that explains it as a beacon-light, piercing the fog that has so long hung about these two aural diseases. Dr. Sexton deserves great praise for his labors in this operation of excision of the membrana tympani, and the thanks of the aurist for the valuable hints contained in this little work.

A Manual of General Pathology and Morbid Anatomy. By H. N. Hall, Ph.G., M.D., Lecturer on Pathology, Post-Graduate Medical School, Chicago. 8vo, pp. 188. Chicago: Rand, McNally & Co., 1891.

This book is one of a class that cannot be too severely condemned. Not only is it entirely inadequate for the needs of the beginner, but it is characterized by defects and imperfections of statement that render it unsafe as a text-book or as a compend. Every page of the work bears evidence of gross carelessness, while errors of orthography occur without limit.

In both English and foreign languages there are good books on pathology and morbid anatomy of which the student can with confidence and advantage avail himself. It is no drawback that they are not abbreviated to the point of uselessness. The student of to-day at best does not read enough, and is thus untrained for independent thought.

The Supreme Passions of Man; or, The Origin, Causes, and Tendencies of the Passions of the Flesh. By Paul Paquin, M.D. 8vo, pp. 150. Battle Creek, Mich.: The Little Blue Book Co., 1891.

Dr. Paquin defines appetite as natural desire; passion as abnormal appetite; while vice is practically the satisfaction of passion. All depend upon stimuli, and each is developed respectively in accordance with the character and in proportion to the intensity of the stimulus. The most prolific as well as the most universal source of abnormal stimulation resides in immoderate living—over-indulgence in animal food, with deficient activity. The recognition of the cause gives the remedy. Dr. Paquin has zealously presented certain truths the general recognition of which, together with the application of the remedial measures to be deduced, could only inure to the common good.

Age of the Domestic Animals. A Complete Treatise on the Dentition of the Horse, Ox, Sheep, Hog, and Dog; and on Various Other Means of Determining the Age of Animals. By Rush Shippen Huidekoper, M.D. Illustrated with 200 engravings. Philadelphia: F. A. Davis, 1891.

This is a work of both scientific and practical value. Dr. Huidekoper has succeeded in making a book that is concise without neglecting important subjects. Depending principally on the teeth as an indication of the age of the animal, the author has tabulated the development and eruption of these structures in such a way as to make this information of much practical value to

veterinary surgeons. He has also given other indications of the ages of animals. The work is fully illustrated.

RECORD-BOOK FOR PHYSICIANS AND TRAINED NURSES. By L. O. VAN RIPER. Chicago.

THIS Record-book is made of about 100 pages, each of which contains columns for the registry of the temperature, pulse, respiration, the number of bowel movements, the frequency of micturition, the color and quantity of the urine, and the medicament, the stimulants, and the nourishment directed, as well as special instructions for every hour of the day.

CORRESPONDENCE.

THE TREATMENT OF INFLUENZA AMONG THE POOR.

To the Editor of THE MEDICAL NEWS,

SIR: Although numerous articles on the treatment of influenza or "la grippe" have appeared and continue to appear, I feel justified in presenting this communication, by reason of the successful treatment of sixty-five cases within a month among the poor, without the use of any of the new coal-tar products.

It is too much the custom among physicians to use indiscriminately every new remedy proposed.

My experience with phenacetin, antipyrin, and other of the recently introduced coal-tar products, leads me to believe that they are all more or less depressing, especially if administered to patients in whom the vitality is already lowered, such as are found among the poor. Having, therefore, abandoned the new drugs, I took refuge in quinine.

Between December 24, 1891, and January 24, 1892, I treated sixty-five patients suffering with "la grippe" and its complications. Most were cigarmakers. Twenty-eight, or nearly 42 per cent., were males; thirty-seven, or nearly 58 per cent., were females; thirteen, or nearly 20 per cent., had bronchitis; four, or nearly 8 per cent., had tonsillitis; eighteen, or nearly 28 per cent., presented severe cerebral and gastric disturbance. Nine cases were in children, all presenting catarrhal symptoms.

All were treated by the administration of quinine suspended in syrup of yerba santa. In cases marked by catarrhal phenomena, I gave the sulphate. When tonsillitis existed I gave the salicylate combined with eucalyptol. When cerebral manifestations were prominent, I gave the hydrochlorate with caffeine. In cases of gastric type I dissolved the quinine in liquor pepsini, and added compound tincture of cardamom. There were no deaths. All were able to resume their work in from four to fourteen days. As a rule, I restricted the diet to hot milk.

The most serious objection to using syrup of yerba santa is that most pharmacists keep on hand only the fluid extract, with which they extemporaneously mix syrup so that the resin is thrown down. The best method of preparing the syrup is to rub the fluid extract up with granulated sugar in a mortar, adding magnesia, then water, constantly stirring and filtering. Prepared in this way the syrup has all of its resinous matters finely suspended, while any bad taste is entirely covered.

Very truly yours,

JOS. F. CHMELLICEK, M.D.

309 EAST SEVENTY-SECOND STREET, NEW YORK.

DISTANT ACTION OF GLYCERIN IN SUPPOSITORIES, ETC.

To the Editor of THE MEDICAL NEWS,

SIR: My object in relating the following case is to try to throw some light upon the subject of the action of glycerin upon the bowels, the instance given seeming to show that the laxative effect of a glycerin suppository or enema is not confined to the parts with which it is brought in contact.

Mrs. ——, aged forty, a multipara, had carcinoma of the fundus of the uterus for more than one year, and during the last three months of her life all her alvine discharges were passed through the uterus and vagina. Neither cathartics nor enemata produced any fecal discharge from the rectum.

On one occasion, when she became uncomfortable from accumulation and hardening of the discharge, I introduced a large glycerin suppository into the rectum. Within half an hour it produced a copious and semi-fluid stool through the uterus and vagina, *but no discharge whatever from the rectum.*

I subsequently had the privilege of an autopsy, Dr. Theodore H. Seyfert assisting me. We found that the diseased fundus of the uterus had become adherent to, and ulcerated into the narrowed colon at its sigmoid flexure, almost severing the continuity, and detaching the mucous lining of the colon from that of the rectum, and *totally obstructing* the upper end of the latter by organized deposits.

As far as one instance can, this one appears to prove that the effect of the glycerin, though originating in the rectum, is not confined to it.

HORACE Y. EVANS.

PHILADELPHIA.

"A NEW SUTURE."

To the Editor of THE MEDICAL NEWS,

SIR: Referring to the "Description of a New Suture" on page 103 of THE MEDICAL NEWS for January 23, 1892, I beg to call your attention to the fact that in September, 1889, I read before the Philadelphia Obstetrical Society a paper on "An Easy Method of Repairing the Perineum" (published, with illustrations, in the *Annals of Gynecology*, October, 1889), in which I described a suture almost identical with that described in THE NEWS. I have used this mode of suturing since 1881, but did not claim it as *new*, believing it to be only a modification and improvement on the old-fashioned quill suture.

Yours truly,

JOHN C. DA COSTA, M.D.

NEWS ITEMS.

The Eleventh German Congress of Internal Medicine will be held at Leipzig from April 20th to 23d, under the presidency of Curschmann. Biermer, of Breslau, and Ehrlich, of Berlin, will discuss Grave Anemic Condi-

tions; Rosenstein, of Leyden, and Stadelmann, of Dorpat, will discuss Chronic Hepatitis. Other papers will be presented as follows: The Cause of Immunity and the Cure of Infectious Diseases, by Emmerich, of Munich; Uremia, by Peiper, of Greifswald; The Results of Removing Large Portions of the Spinal Cord (a report on observations made on dogs by Goltz and Ewald), by Goltz, of Strasburg; The Recognition of So-called Hepatic Colic, and of Pseudo-gallstones, by Fürbinger, of Berlin; Further Communications on Diabetes Mellitus Consecutive to Extirpation of the Pancreas, by Minkowski, of Strasburg; Treatment of Carcinoma, by Adamkiewicz, of Cracow; The Different Forms of Pneumonia, by Finkler, of Bonn; The Therapeutic Value of Blood-transfusion in the Human Subject, by Landois, of Greifswald; The Cure of Tuberculosis and the Biology of the Tubercle-bacillus, by Klebs, of Zurich; The Causes of Immunity and Cure, Especially in Pneumonia, by Klemperer, of Berlin, and Klemperer, of Strasburg; Immunity Against Infectious Diseases, by Buchner, of Munich. Gerhardt, Ebstein, and Von Jaksch have also promised communications.

An Army Medical Board will be in session in New York City, N. Y., during April, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before April 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C., DR. C. SUTHERLAND.

Rush Medical College.—A *concours* will be held at Rush Medical College, beginning Tuesday evening, March 1st, for the purpose of filling the positions of Lecturer on Anatomy and Lecturer on Materia Medica and Therapeutics in the spring faculty.

The spring course begins March 31st, directly after the close of the regular term, and continues two months, with a class of from 250 to 300 students.

It is the policy of the College, so far as practicable, to fill vacancies in the regular faculty from the corps of spring instructors. Nine of the present members of the regular faculty have been selected in this way.

The *concours* will consist of twenty-minute lectures by each of the applicants, before the faculty, students, and local profession, upon subjects pertaining to their respective branches, to be indicated by the Professor of Anatomy and the Professor of Materia Medica and Therapeutics a week before the contest.

An Orthopedic Department at the Philadelphia Hospital.—At a recent meeting of the Bureau of Charities a communication from Dr. H. Augustus Wilson was received proposing the establishment of an Orthopedic Department at the Philadelphia Hospital. The subject was referred to the Medical Board.

An International Gynecologic and Obstetric Congress will be held at Brussels in September of the present year. The following subjects will receive special discussion: Pelvic Suppuration, to be opened by Segond, of Paris; Extra-uterine Pregnancy, by Martin, of Berlin; Placenta Previa, by Hart, of Edinburgh.

Cremation.—A crematory is to be erected in the Berlin City Cemetery, which it is intended shall be superior to any in Europe.

BOOKS AND PAMPHLETS RECEIVED.

Dental Infirmary Patients; the Use and Abuse of Dental Charity. By Richard Grady, M.D., D.D.S. Reprint, 1891.

Diseases of the Bladder and Prostate. By Hal C. Wyman, M.Sc., M.D. Detroit, Mich.: George S. Davis, 1891.

Contribution à l'Étude du Sarcome de la Parotide. Par Luis Rodriguez. Paris: G. Steinheil, Editeur, 1890.

Transactions of the American Gynecological Society, Vol. XVI, for the Year 1891. Philadelphia: Wm. J. Dornan, 1891.

Syphilis in Ancient and Prehistoric Times. By Dr. F. Buret, of Paris, France. Translated from the French, with Notes, by A. H. Ohmann-Dumesnil, M.D. No. 12, Physicians' and Students' Ready-reference Series. Philadelphia and London: F. A. Davis, 1891.

Consumption: How to Prevent It, and How to Live With It. By N. S. Davis, Jr., A.M., M.D. Philadelphia and London: F. A. Davis, 1891.

The Chinese: Their Present and Future—Medical, Political, and Social. By Robert Coltman, Jr., M.D. Illustrated. Philadelphia and London: F. A. Davis, 1891.

Water as a Local Anesthetic. By Robert H. M. Dawbarn, M.D. Reprint, 1891.

Medical Hemorrhage Surgically Treated, with a Successful Case by a New Technique of Saline Infusion for Severe Hemorrhage. By Robert H. M. Dawbarn, M.D. Reprint, 1891.

The Action and Application of the Faradic Current in Gynecology. By Augustin H. Goelet, M.D. Reprint, 1891.

Trachoma and Its Treatment. By W. Cheatham, M.D. Reprint, 1891.

Seventh Annual Report of the Adirondack Cottage Sanitarium, Saranac Lake, November, 1891.

Traumatic Neuroses in Damage Suits. By Howell T. Pershing, M.Sc., M.D. Reprint, 1891.

Remarks Introductory to a Discussion on Acute Diffuse Peritonitis. By A. L. Carroll, M.D. Reprint, 1891.

The Temperature in Acute Primary Pneumonia of Children and the Diagnosis of Acute Broncho-pneumonia from Bronchitis. By L. Emmett Holt, M.D. Reprint, 1891.

Stricture of the Rectum. By Charles B. Kelsey, M.D. Second Edition, enlarged. New York, 1891.

What Can be Done in Cerebral Surgery. By Emory Lanphear, M.D., Ph.D. Pamphlet. Kansas City, Mo., 1891.

De la Chloroformisation à Doses et Continues. Par le Dr. Marcel Baudoin. Extrait de la Gazette Hôpitaux. Paris: Aux Bureaux de la Revue des Sciences Naturelles de l'Ouest, 1892.

Essentials of Medical Physics. By Fred. J. Brockway, M.D. Philadelphia: W. B. Saunders, 1892.

Essentials of Medical Electricity. By D. D. Stewart, M.D., and E. S. Lawrence, M.D. Philadelphia: W. B. Saunders, 1892.

Physical Diagnosis: A Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P. Edin., and William Russell, M.D., F.R.C.P. Edin. New York: D. Appleton & Co., 1891.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A STUDY OF THE BLOOD AFTER HEMORRHAGE, AND A COMPARATIVE STUDY OF ARTERIAL AND VENOUS BLOOD, WITH REFERENCE TO THE NUMBER OF CORPUSCLES AND THE AMOUNT OF HEMOGLOBIN.

BY GUY L. KIEFER, M.D.,
OF ANN ARBOR, MICH.

IT has been considered a fact that venous blood contains a greater number of corpuscles and a larger amount of hemoglobin than does arterial blood, but this statement has been contradicted recently by Cohnstein and Zuntz, who maintain that there is no such difference, and that the results obtained by previous investigators were due to the venous stasis caused by their experiments. The work of Cohnstein and Zuntz shows, as an average of eleven arterial determinations, 5,307,100 corpuscles per c.mm., and as an average of twelve venous estimations 5,191,600 corpuscles per c.mm. In order, if possible, to throw more light on this subject, I have made a number of experiments, the results of which will be seen in this paper.

Most of my experiments were limited to one mammal—the cat—in order that by confining the work to one kind of animal I might gain a certain degree of familiarity with the peculiarities of its blood, and thus obtain better results.

For the estimation of the percentage of hemoglobin in the blood, Gowers's hemoglobinometer was used, and for the determination of the number of corpuscles Malassez's hemocytometer, as made by Verick in 1883, with a 3 per cent. solution of sodium sulphate (sp. gr. 1025) as the diluting fluid. I made a number of estimates of normal human blood, with the following results: As a mean of five estimates on various men, 4,560,000 corpuscles and 90 per cent. of hemoglobin were obtained with the instruments used, and as a mean of four estimates of my own blood taken at different times, 4,800,000 corpuscles and 95 per cent. of hemoglobin. As a mean of twenty-one estimates on cats I obtained 6,646,000 corpuscles per c.mm. of blood, and 80 per cent. of hemoglobin. Blood for examination in the case of a cat was taken from the ear.

For the comparative study of arterial and venous blood two methods of procedure were employed.

1. An artery and its corresponding vein were laid bare for some distance, two ligatures applied simultaneously to each, and then the piece enclosed between the ligatures was removed, and the blood contained in it examined. Due care was taken to dry the outside of each vessel, so that only the particular kind of blood desired was obtained.

2. An artery and its corresponding vein were laid bare, and a little blood taken from each (without applying any ligatures) by means of a hypodermatic syringe. Care was taken to clean and dry the instrument thoroughly before each estimation.

By these methods the circulation was not interfered with. During all the experiments the cats (or other animals) were kept tied down, and anesthetized with ether. Inasmuch as I had but one hemocytometer and hemoglobinometer at my disposal, I could make but one determination at a time, but the other was made as soon as possible thereafter; and in order to counteract the difference that might be brought about by this circumstance, I examined the vein first in some experiments, and the artery in others.

Seven experiments were made, with the following results: In all of the experiments, except one, there was a slight difference in favor of the vein, and the average of all the experiments showed a difference of 60,000 corpuscles per c.mm., and less than 1 per cent. (0.33) of hemoglobin, in favor of the vein; but in determinations of this kind this slight variation is within the limits of error. My experiments would lead me to believe, therefore, that there is very little or no difference in the amount of hemoglobin and the number of corpuscles in the arterial and venous blood, and that the large differences usually reported are due to interference with the venous circulation, as claimed by Cohnstein and Zuntz. But in order to be convinced on this point, I made a number of experiments for the estimation of the venous blood before and after ligating the vein, *i. e.*, before and after interference with the circulation.

The methods of obtaining the blood were the same as those employed in the first set of experiments, viz., by taking out a piece of the vein, and by means of the hypodermatic syringe. In cases in which the latter method was employed the vein was laid bare, and a drop of blood taken by means of the syringe and examined. Then the vein was ligated, and a short time afterward a drop of blood was

taken on the peripheral side of the ligature and examined. In cases in which the former method was used the vein was laid bare, and two ligatures were applied simultaneously. After ligating the vein again, on the peripheral side of the section just isolated, the piece was removed, cleaned, and examined as before. After a short time another ligature was applied to the peripheral side of the one last made, and this piece was also taken out and examined. By these two methods I was enabled to get satisfactory samples of venous blood before and after venous stasis had been produced. In these experiments I ascertained simply the number of corpuscles in order to facilitate the work, and as the amount of hemoglobin is in proportion to the number of corpuscles, an estimation of it seemed unnecessary.

All of my experiments (eight in number) show a considerable increase in the number of corpuscles after ligating, the difference in one case being over a million. The average of all the experiments made shows an increase of 537,500 corpuscles per c.mm. after ligating, and we may conclude, therefore, that the large differences found by previous workers were due to this cause.

A study of the regeneration of the blood after hemorrhage involves a consideration of two other questions, viz.: 1. Are the amount of hemoglobin and the number of corpuscles diminished in proportion to the amount of blood lost, *e. g.*, after a hemorrhage of 100 c.cm. of blood will the diminution in the amount of hemoglobin and the number of corpuscles be twice as great as after a hemorrhage of fifty c.cm. of blood? 2. Are the amount of hemoglobin and the number of corpuscles always in proportion to each other after hemorrhage, *i. e.*, during the entire period of regeneration?

In all of my experiments the animals were bled from the carotid artery. An ordinary glass canula, of as large a caliber as possible, was used, and the blood allowed to flow quite rapidly. In some cases, when the hemorrhages were very severe, a quantity of normal saline solution was injected hypodermatically immediately after the blood had been drawn. None of my observations were made immediately after the hemorrhage. Twenty-four hours were allowed to pass in each case before making an estimation. The blood for examination was taken from the ear by clipping it very slightly. In each case there was a diminution in the amount of hemoglobin and the number of corpuscles twenty-four hours after the hemorrhage, and this diminution was found to be substantially in proportion to the amount of blood taken. For example, in the case of the slightest hemorrhage that was produced (2.1 per cent. of the body-weight), the amount of hemoglobin was reduced to 52.85 per cent. of the normal, and the number of corpuscles was reduced to 61.8 per cent. of the original number; while in the case of the largest hemorrhage (3.04 per cent. of the body-weight), the amount of hemoglobin was reduced to 46.6 per cent., and the number of corpuscles to 48.7 per cent. of the normal, and the same relation existed in each case. Whether or not the same result is obtained when the hemorrhages are less severe was not determined. From the results just given it would appear that in each case after hemorrhage the diminution in the amount of hemoglobin is greater than that in the number of corpuscles, but this is not necessarily the case. My first estimations after the hemorrhage showed in some animals an equal diminution in the amount of hemoglobin and the number of corpuscles, while in other cases the diminution in the amount of hemoglobin was the greater.

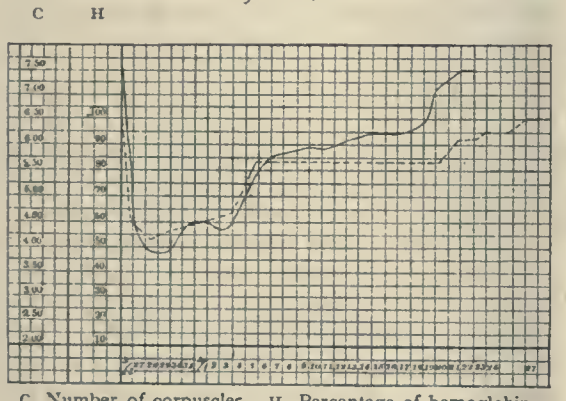
With reference to the second question, it will appear from the curves of regeneration that in each case it took a longer time for the amount of hemoglobin to return to normal than for the number of corpuscles. From this circumstance we may conclude that after hemorrhage the amount of hemoglobin is not always in proportion to the number of corpuscles, and probably for the reason that the new corpuscles are formed more quickly and in greater quantity, and consequently contain less hemoglobin, than the normal.

For the study of the time of regeneration of the blood daily estimations were made after the hemorrhage, and the data so obtained were used to construct curves of regeneration. In each case the animal was bled, as described, and was fed on milk and meat during the regeneration. The animals were studied one at a time, as far as possible, and were kept in a large cage, with plenty of air and light.

From the curves constructed from the experiments it appears that the diminution in the number of corpuscles, and in the amount of hemoglobin, continues for a number of days after the hemorrhage, reaching its minimum in from two to seven days, after which there is a steady rise to normal in the case of the corpuscles, but in the case of the hemoglobin the curve is somewhat different. During the period of fall and the first portion of the period of rise the hemoglobin and corpuscle curves are very similar; then for some time the hemoglobin lags behind the corpuscles until nearly the time when the corpuscles are restored to normal, when it takes a sudden rise and reaches normal somewhat later than the corpuscles. The specimen curve given in the accompanying figure illustrates very well the two peculiarities described. The entire time of regeneration was found to vary from twenty-one to thirty-four days. My experiments confirm the

results reached by former investigators. Otto found that the minimum diminution was reached in from one to five days, and that the time of regeneration varied from seven to twenty-five days. Hünerfauth (Heidelberg) found that the minimum was reached in from one to nine days, and the normal in from fourteen to twenty-two days. According to Buntzen the number of corpuscles is reduced after hemorrhage, and reaches its minimum in from one to eleven days, and the entire period of regeneration, according to this author, varies from

EXPERIMENT NO. 6. Cat: weight, 3628 grams. Hemorrhage, 90 c.cm.



C. Number of corpuscles. H. Percentage of hemoglobin.

Curve showing the regeneration of the red corpuscles and of the hemoglobin after hemorrhage. The experiment was made upon an unusually vigorous animal, so that the regeneration was more rapid than in most of the experiments. The full line gives the curve for the corpuscles, and the dotted line that for the hemoglobin. Observations were made at intervals of twenty-four hours from the 26th of March to the 27th of April.

nine to thirty-five days. There does not seem to be any explanation given for the continued diminution of the number of blood-elements during the first days after hemorrhage. Leaving aside mere variations in the amount of blood-plasma, two possible explanations have suggested themselves to me. The continued sinking in the number of corpuscles and in the amount of hemoglobin after hemorrhage may be due to the fact that the consumption of blood-corpuscles during this time is greater than the regeneration, owing to some acceleration in the body-metabolisms, or possibly there may be a scarcity of material for the manufacture of new corpuscles, so that after the first output of corpuscles from the hematopoietic organs, brought about by the anemia, the reserve supply is depleted to such an extent that for some days the production of new red corpuscles is smaller than it was immediately after the hemorrhage. This latter hypothesis is one that may be tested directly by examinations of the marrow; experiments of this kind may be made later in this laboratory.

PHYSIOLOGICAL LABORATORY, UNIVERSITY OF MICHIGAN.

HEMOPHILIA.

BY B. K. RACHFORD, M.D.,
CLINICIAN TO CHILDREN'S CLINIC, MEDICAL COLLEGE OF OHIO, CINCINNATI, OHIO.

I WISH to place on record some cases of hemophilia in a family of bleeders, that, so far as I can learn, are not connected with any of the bleeder families hitherto reported. They occurred in the family of Charles Denner, a German-American farmer living in Campbell County, Ky., six miles south of Newport.

Denner is fifty-six years old. He was born in Bavaria, but came to this country when quite a young man. He married in Campbell County, Ky., and twenty-nine years ago settled on the farm he now occupies. He has four brothers and one sister, and they are living in this country. If there was any hemophilia in their ancestors, they know nothing of it. They never heard of the disease until it developed in this family. The wife was born in Campbell County, Ky. She died ten years ago, of peritonitis, after six days of illness. Her father, who is now living, never heard of hemophilia, and is quite sure that none of his immediate ancestors had it.

In short, the most careful investigation into the family history makes it probable that the disease originated in this family; but the most careful inquiry fails to throw any light on the causal conditions. There is no history or evidence of tuberculosis or syphilis in the family. There was no blood-relationship between the husband and wife. The family has always lived on a farm, and has had plenty of food, fresh air, and exercise. The boys and girls alike have been accustomed to the hardest kind of farm labor, and all except the bleeders are types of health and strength.

There were nine children in the family, four of whom are now dead.

Lizzie Denner, the oldest child, is not a bleeder. She is married, and has three children, all boys, one of whom is a bleeder. (Case III.)

Charley Denner, the second child, bled to death when two years and three months old. (Case I.)

Henry Denner, the third child, died when fifteen months old, of "summer complaint."

Kate Denner, the fourth child, died when one year old, of "summer complaint."

Harry Denner, the fifth child, was not a bleeder. He died, when nineteen years old, of peritonitis, which came on without apparent cause.

Martin Denner, aged sixteen, is strong and well. He was never sick, and is not a bleeder.

George Denner, aged fourteen, is a bleeder. (See Case II.)

Sallie Denner, aged twelve, is well, and is not a bleeder.

Willie Denner, aged ten, is well, and is not a bleeder.

From this family history the diagnosis of hemophilia is plain. The parents were non-bleeders, and they came from non-bleeder ancestors, yet they produced a family of bleeders, and the disease has passed by heredity to their grandchildren. Here we have the strange phenomenon of children inheriting from their parents a disease that neither of these parents nor any of their ancestors ever had. In this field for speculation we may suppose that two or more harmless factors were so united in the marriage of Charles Denner and his wife as to produce in their descendants this strange disease, the pathology of which is quite as obscure as its etiology. During the past few months I have tried, but failed, to make arrangements for studying the blood of the various members of this family. What I especially wished to inquire into was the comparative number of blood plaques to be found in the bleeder and the non-bleeder, believing as I do that such an investigation may throw some light on the pathology of this disease.

Now let me give a brief history of the cases, calling special attention to the method by which the bleeding was stopped in Case II:

CASE I.—On June 1, 1866, Charley, the oldest son, two and a half years of age, came into the house bleeding from the upper surface of the tongue, about half an inch from the tip. The parents thought the child had bitten its tongue, although there was no wound to be seen, or any evidence of injury other than the bleeding. The bleeding continued, notwithstanding competent medical attendance, until five days later, when the child died from exhaustion.

CASE II.—In 1884, George, aged seven years, bled for five days from a very small scalp wound. With two physicians in attendance, the bleeding was only finally controlled by perchloride of iron and compresses.

On May 30, 1891, I found this same boy, now fourteen years of age, awaiting me in my office. He told me that he had been bleeding constantly for the past twenty-six hours. The bleeding-point was in the median line of the upper surface of the tongue, about one inch from the tip. There was no history of injury or evidence of a wound, other than the blood oozing from the bleeding-point.

I learned from the boy's father, who accompanied him, the family history as I have narrated it, and the history of this boy's previous attack of bleeding seven years before. I also learned that during the last few years he had several times suffered from painful swellings of the elbow-joints, with a dark-blue discoloration of the skin near the joint. This history, together with the fact that the boy had been treated with styptics of various kinds before coming to me, at once made the diagnosis clear, and the prognosis very doubtful. The details of treatment during the next few days are of no special interest. Ergot and tincture of iron were given internally and applied locally; perchloride of iron, tannic and gallic acids, and nitrate of silver and other styptics were applied. Collodion and other applications suggested by medical friends were also tried. But in spite of all treatment the boy continued to bleed until June 2d, the fifth day of the hemorrhage. By this time he was quite weak, and had a tired, anxious look; his lips were pale, his pulse 120, and at times intermittent.

The morning of June 2d I searched in vain the largest instrument house in Cincinnati, hoping to find some instrument suitable for compressing the bleeding-point. Returning home, I remembered that I had in my possession a large clamp, made for work in experimental physiology. It was found and used in the following way: A small piece of cotton was saturated with Monsell's solution, and placed on the bleeding point. Over this was laid a larger piece of dry cotton to act as a compress. This compress in position, the tongue was engaged between the two brass plates of the instrument, the upper plate holding the compress in position. The nuts were now screwed down so as to hold the tongue securely in the grasp of the instrument. The tongue, with the instrument applied, could occupy its normal position in the mouth. The compression was continued for two hours, and during this time the grasp of the instrument was several times slightly relaxed to allow better circulation in the tip of the tongue. In two hours the instrument was removed, and the bleeding did not recommence. The boy very quickly recovered from the effect of this hemorrhage, and has had no bleeding since. But early in July both elbow-joints again enlarged, and were very painful, and near the joint were large dark-blue spots, marking the site of interstitial hemorrhages. Since this time the boy has been disabled the greater portion of the time by these painful joint-swellings.

CASE III.—A male child, two years of age, is the youngest of three children, all boys; the other two are not bleeders. The mother of this child is Lizzie Denner, the oldest child of Charles. The father of the child does not come of a bleeder family. The child at present has painful joint-swellings, marked with blue spots, showing interstitial bleeding. This child has twice had very dangerous hemorrhage from slight scalp wounds.

In this case the disease was inherited, and passed through a female non-bleeder to her male child, thus illustrating the important influence of heredity and sex in perpetuating this interesting and mysterious disease.

A CONTRIBUTION TO THE STUDY OF ACCIDENTS FROM EQUESTRIANISM.

BY J. N. HALL, M.D.,
OF STERLING, COLORADO;
EX-PRESIDENT COLORADO STATE BOARD OF MEDICAL EXAMINERS.

I HAVE records of forty-four consecutive accidents happening to horseback riders during the past few years, and present herewith an analysis of them. I

recall quite a number of minor injuries, mostly slight bruises and sprains, of which I have made no note. A vast number of this nature must have occurred here not demanding serious consideration, those discussed being such only as really demanded treatment. The accidents have been very largely among the cowboys of this region, but five of the whole number occurring in females. The cases are tabulated according to the most serious injury when more than one affected the same individual. Although most of those injured received bruises and contusions, in addition to the affection for which they have been entered here, in no case were these of sufficiently serious nature to demand consideration under other headings. There have been no fatal cases among them, and the recoveries have been what we may term surgically perfect, excepting as noted later.

Thirty-nine of the forty-four were males (88.7 per cent.), of an average age of twenty-three years. Five were females (11.3 per cent.), of an average age of twenty years. The head was injured six times, or 13.6 per cent.; the trunk three times, or 6.8 per cent. The extremities were affected in thirty-five cases, the upper in fifteen, or 34.1 per cent., and the lower in twenty, or 45.4 per cent. Of these thirty-five injuries that we might term unilateral, twenty were upon the left side, or 57.1 per cent., and fifteen upon the right side, or 42.9 per cent. I have had a strong impression that the left side sustained a far greater proportion of these accidents than the right, but this seems doubtful, judging from the limited material at our disposal, if there be any foundation at all for such a belief.

The injuries to the different parts have been generally from totally different causes. Those to the head, six in number, were, excepting one, from being directly thrown so that the head struck the ground. In the exceptional case the boy was dragged nearly a mile on his back by the stirrup. Of injuries to the trunk, one was caused by being struck by the saddle-horn, and the other two apparently by the horse rolling over the rider.

With the upper extremities the injury has been from striking the ground (in one case a building), often, no doubt, in the effort to save the face from injury. In all but two cases, on the contrary, the affection of the lower limbs has been from the weight of the horse's body, as it fell upon the part injured. In these two cases, synovitis of the knee occurred, apparently from the shock of alighting.

Of the whole forty-four cases there were: of fractures alone, seventeen instances; of dislocations alone, three instances; of fractures and dislocations in combination (both of the elbow-joint), two instances. Thus 50 per cent. of all injuries were included under fractures and dislocations.

There was but one compound fracture, this being of the right leg into the knee-joint, caused by the horn of the saddle after the rider lay on the ground. The simple nature of 95.5 per cent. of all these fractures and dislocations is in refreshing contrast to the compound injuries of this class so common in railroad and machinery accidents. I have included one case of separation of the epiphysis among the fractures. To me, the most surprising showing of this portion of the table is the relative infrequency of dislocations. Two of the three were of the shoulder, and one of the left metatarsal bone.

There were no fractures of the shaft of the humerus. In two cases the internal condyle was separated and both bones of the forearm dislocated, in one instance backward, in one inward. In one case the left external condyle alone was broken. The clavicle was broken in three cases, the left one in each. There was one instance of green-stick fracture of the bones of the right forearm, from the rider being thrown against a building by a bucking horse. Two Colles's fractures of the right arm were noted.

One robust young man (aged twenty-six) received an impacted fracture of the neck of the left thigh-bone as his horse fell upon him. His youth should be noted, although, inasmuch as the horse weighed about 1000 pounds, it would not seem that age could influence the result very much. There was but one fracture of the shaft of the femur, occurring in a man about twenty-five years of age, from a fall directly over a rail as the rider crossed the track, a led horse having pulled the ridden one over on to the rider.

But one comminuted fracture was seen, this being the compound one already mentioned. Four distinct pieces of the tibia were made out in this case. Both bones of the leg were broken in two other instances, the tibia only in one, and the fibula only in three.

There were six cases of sprained ankle, three of the right, and three of the left. As the milder cases of this injury rarely come to the notice of the surgeon in a sparsely settled country, I believe, from the number of cases of which I have known or that I have seen without being called upon to treat, that this is as common as all the other injuries together, for the foot is very frequently caught under the horse when turning suddenly, or in falling on slippery ground.

Two of the cases of concussion of the brain, one of them being the boy mentioned as having been dragged nearly a mile by the stirrup, have not been entirely sound of mind since; the other of these two cases showed, in addition, considerable wasting of the muscles of the left side for a year after being hurt. It is probable that something more than a

simple concussion occurred in these cases, although, as in both instances I saw them first several days after the injury, I am unable to say just what it may have been.

The man with the impacted fracture of the hip naturally has a slight limp, as I informed him that he would have. The fracture of the internal condyle, with dislocation of the radius and ulna inward, left motion limited to about two-thirds of the natural amount. This case was not seen by any physician until the sixth day, the family, in some unaccountable way, supposing it to be a simple sprain.

In the fracture of the thigh there was a shortening of one-half inch. I believe most of this would have been avoided had not the patient been a cowboy. The muscles of his thigh, developed by a life in the saddle, contracted very firmly, and I found it impossible to overcome the tendency to shortening.

ORIGINAL ADDRESS.

THE OBJECTS, PLANS, AND NEEDS OF THE LABORATORY OF HYGIENE.

An Address delivered at the Opening of the Laboratory of Hygiene of the University of Pennsylvania, February 22, 1892.

BY JOHN S. BILLINGS, M.D.,
DIRECTOR OF THE INSTITUTE; SURGEON, U.S. ARMY.

FROM those who have preceded me you have heard of the origin of this Laboratory, and something of the wishes, hopes, and expectations of the public with regard to it, as indicated by the donor, and by representatives of the University and the State.

You see clearly that this magnificent gift imposes a heavy responsibility upon those who are charged with the duty of managing it, and of seeing that it is so used as to meet the many and various demands which may rightfully be made upon it; and, in attempting to explain to you briefly what the Laboratory now is, and why it is as it is, I come before you oppressed with a keen sense of this responsibility, which is not lessened, but rather increased, by the fact that I feel that I am speaking to friendly critics.

For this new building, with its equipment and resources, is but an implement—a piece of mechanism—which may be used to shape products of vast importance, not only to the world as it is, but to generations not yet conceived; or which, on the other hand, may be so used as to be of little more importance to humanity than the toy tool-chest or the doll's-house of a child.

What this use shall be depends upon the force and skill applied to it; upon the materials submitted to it; upon the ability of those who guide it to foresee the direction in which at each moment of time it is best to move it; upon the knowledge and patience of those who are working in it; and, when all these are at their best, the results must still depend upon the decrees of Divine Providence, upon circumstances which no man can fully foresee, and which, therefore, no man can, with certainty, control to the end desired.

The position of laboratories in their relations to education, to science, to technology, and to the executive departments of governments and the welfare of the public, has become a very notable one within the last fifty years. A laboratory—or, as it was called in old times, an "elaboratory"—is, as its name indicates, a place for labor, for work—and especially for skilled labor, in the making of delicate and difficult observations and experiments; for analysis, to determine composition and causes; for synthesis, to determine the results of new combinations; for solving old problems, and for stating new ones. It is not a museum, or a store-room, or a show place; nor does this kind of a laboratory offer much for sale, except opportunity.

Only an opportunity—just a few possibilities, offered to the man who desires knowledge, who wants to see, and touch, and try for himself. Yet this offer of such an opportunity is what distinguishes it from those institutions established for the benefit of individuals.

The ideal laboratory of the alchemist or philosopher of bygone days was a mysterious, dusky place, the operations in which were kept a profound secret, and which thus gained in repute what they could not have obtained by publicity and free criticism.

Laboratories planned and fitted for public use, offering to anyone who is able and willing to pay a moderate fee and to submit to a few simple regulations, not only opportunities for learning the details of the processes carried on therein, but also facilities and means for making special research that he could only obtain otherwise at great expense and loss of time; such laboratories, I say, are all of comparatively recent date.

It is not yet twenty years since the first separate institution of this kind was established for hygiene—and even now there are not more than a dozen such laboratories, specially built and fitted for their purpose, in existence throughout the world. Of these, the best known is probably that of the University of Munich, under the direction of Professor Pettenkofer, while the largest is that of Berlin.

This laboratory is the first structure of its kind erected in the United States, and it therefore opens a comparatively new field of work in this country. What is the nature of this field, and what are its boundaries?

The object of hygiene is to preserve and to improve health, and there are few matters affecting the physical, intellectual, emotional, and moral condition of man as an individual, or of men in communities that may not come within the scope of its investigations. The destruction or avoidance of causes of disease is but a part of its objects—it is at least equally concerned with the means of making a man better fitted to resist these causes. "That kind of health," says Montesquieu, "which can be preserved only by a careful and constant regulation of diet is but a tedious disease." Disease, like health, is a vague term, including widely different and often very complex conditions, processes, and results, which must be observed, classified, and described in such a way that different men, widely separated in space and time, may know that they are seeing the same things, and thus may have the benefit of each other's experience.

In its scientific aspects, then—those which relate to definite and precise knowledge—hygiene rests largely on physiology and pathology, the third leg of the tripod being formed by vital statistics; while, in its practical

Laboratory of Hygiene,
University of Pa., Phila.
Second Flat Plan
Cottins & Butcher,
Architects,
410 Walnut St., Phila.
Roof of Animal House
Air-inlets & Radiators
Counters
Air-duct & reduced valve
Sinks
Gas Stove
Dark Passage
Gas Outlets
Fume Chest
Dark Room
Photographic Room
Research Room
Chamber
Hall
Bacteriological Laboratory
Library
Director's Room
Store Room

Laboratory of Hygiene,
University of Pa., Phila.
First Flat Plan
Cottins & Butcher,
Architects,
410 Walnut St., Phila.
Animal House
Lecture and Class Room
Museum
Hall
Janitor's office
Students' Closet
Fume Chest
Drawing Room
Research Room
Chemical Laboratory
Balance-shelves
Shelves
Instructors' table
Desks
Gas-stoves
Ventilating-tubes
Air for Aspirators

aspects, it must rest on chemistry, physics, and the data of sociology and politics.

At any given time, therefore, its scope and practical value must depend largely upon the breadth and solidity of the foundations which these various branches of science can provide for it. The opinions of the medical faculty of Paris as to the causes of the "black death," and the advice which they gave as to the means for lessening the "great mortality," absurd and preposterous as they now appear to us, were yet fully in accord with the knowledge and opinions of the time.

At the beginning of this century physicians did not distinguish with any certainty between typhoid, typhus, and malarial fevers; or between consumption and various other chronic diseases of the lungs, and, until this was done, investigations into the causes of these affections were necessarily almost fruitless.

When, however, a clue is once given to the student of causes, he may be able, by detecting differences in these causes, to call the attention of the pathologist to differences in the results, and thus the bacteriologist, by proving specific differences in microörganisms, all of which produce fever, suppuration, etc., induces closer study of details of cases by physicians, and the recognition of new and more clearly defined groups of symptoms and results, or, in other words, of new diseases.

We live in an age of specialization. Progress in science as a whole depends upon special progress in each of its branches. Our present knowledge of physiology depends largely upon the perfection of electric methods. Pathology and pathologic bacteriology are now waiting for increase of knowledge in organic chemistry. The law of evolution applies to this as it does to modern industrial progress.

The physician deals with sick men, and his first question is, What is the matter with this person? That is, What group of symptoms does he present, and to what derangement of his mechanism are these due? The hygienist deals with two sets of problems—the first relating to men who are not sick, and how their health and vital resistance-power are to be not only preserved but improved and strengthened; the second relating to sick houses, feverish blocks or wards, infected localities—where the first questions to be solved are, What are the causes of this condition of things? how have they found entrance? are they still acting?

In the investigation of causes he must consider not only the immediate or exciting, but also the remote or predisposing; not only those which are preventable, but those which, with our present knowledge, are unpreventable; and thus it is that heredity, race, local meteorology, occupation, and many other circumstances must be studied by him, as well as the effects of food, clothing, habitation, poisons, and viruses.

Much of all this was known to a few wise men long ago, as is shown by the scheme of inquiry stated by Lord Bacon in his *Articles of Inquisition touching Life and Death*:

"3. Inquire touching the length and shortness of life in living creatures, with the due circumstances which make most for their long or short lives.

"4. But because the duration of bodies is two-fold; one, in identity, or the self-same substance; the other, by a renovation or reparation; whereof the former hath place only in bodies inanimate; the latter, in vegetables and living creatures; and is perfected by alimentation or nourishment; therefore, it will be fit to inquire of alimentation, and of the ways and progresses thereof; yet this, not exactly because it pertains properly to the titles of assimilation and alimentation, but, as the rest, in progress only.

"Inquire touching the length and shortness of life in men, according to the ages of the world, the several regions, climates, and places of their nativity and habitation; . . . according to their races and families, as if it were a thing hereditary; also, according to their complexions, constitutions, and habits of body; their statures; the manner and time of their growth; . . . according to their fare, diet, government of their life, exercises, and the like. . . . But because it will be hard to know the ways of death, unless you search out and discover the seat, or house, or rather den of death, it will be convenient to make inquisition of this thing; yet not of every kind of death, but of those deaths which are caused by want and indigence of nourishment, not by violence; for they are those deaths only which pertain to a decay of nature, and mere old age. . . . Inquire touching the point of death, and the porches of death leading thereunto from all parts; so as that death be caused by a decay of nature, and not by violence."

Most of this is wise and far-seeing, yet little came of it for two hundred years. By way of contrast, let us take a few of the rules which Lord Bacon fixed for his own use, in order to prolong life:

"1. Once in the week to take the water of Mithridate distilled, and some grains of niter and saffron, in the morning between sleeps.

"6. To take every morning the fume of lign-aloes, rosemary, and bays dried, which I use; but once in a week to add a little tobacco, without otherwise taking it in a pipe.

"10. In the third hour after the sun is risen, to take in air from some high and open place, with a ventilation of musk roses and fresh violets; and to stir the earth, with infusion of wine and mint.

"17. To use once during supper-time wine in which gold is quenched.

"28. To provide always an apt breakfast."

A curious mixture of good-sense and rubbish, these rules, which are well worth reading.

The scheme of inquiry as to causes of disease and preservation of health to-day includes most of Bacon's questions, and also many others of which he did not dream. Let us consider, briefly, some of those which belong to our laboratory work.

The recent advances in our knowledge as to the action of certain microörganisms in the production of disease in animals and man have been largely made by laboratory methods, and indicate clearly that the study of bacteria and microzoa, and of their development, products, and effects, must be an essential part of the work of a hygienic laboratory, which should provide the peculiar arrangements and apparatus which are required for this sort of work. In fact, several so-called hygienic laboratories are simply bacteriologic laboratories, the interest in this particular branch of investigation having, for the time being, overshadowed all others.

Our laboratory, however, must provide also the means

for chemical investigations of air, water, food, sewage, secretions and excretions, and the products of bacterial growth; for testing the effects of gases, alkaloids, and albumoses of various kinds upon the animal organism; for investigations in the domain of physics, pertaining to heating, ventilation, house-drainage, clothing, soils, drainage, etc.

Perhaps a summary of what the German hygienic laboratories have been occupied with for the last five or six years, as indicated by the published reports and papers of those who have been working in them, will afford some indications as to the field which they have occupied.

First in number and extent, as just stated, come the bacteriologic investigations relating to anthrax, tubercle, typhoid fever, erysipelas, suppuration, diphtheria, pneumonia, cholera, and other diseases of men and animals.

Closely connected with these are the experiments on disinfection, and the testing of various forms of apparatus for disinfecting by steam or by dry heat.

Next come examinations of drinking-waters, of the effects of various impurities in waters, effects of lead pipe on waters, self-purification of running waters, changes in stored waters, etc. The effects of working in compressed air; the air of school-rooms, of assembly halls, of hospitals; the dusts and germs of the air, its changes by respiration and by ventilation, form another group of subjects.

Foods and drinks have occupied much attention—the quantity and quality of different articles that are most desirable—their adulterations, preparation, and preservation, including studies of meats, bread, milk, beer, wines, meat-extracts, etc.

Soils of streets, gardens, cemeteries, etc., with reference to their moisture, gases, and bacteria, seem to have received much investigation.

Clothing, various kinds of lighting, of heating, of plastering, and of floors and floor fillings, have kept some of the students busy. "Poisonous colors in clothing," "Bacteria in rags, canned foods, damp walls, shoes, ice," "Modes of disinfecting walls and floors," "How can a polluted well be purified?" are titles taken at random.

Just at present, research is being specially directed to certain minute animal organisms—the microzoa—such as are found in the blood in malaria and in the skin in certain diseases, and to immunity, especially to that immunity which may be artificially produced.

Experimental investigation is a slow process, and very uncertain in its results.

An experiment may be conceived which seems as if it would give important results. The experiment itself would require only a few moments or a few hours if all the apparatus were ready to produce the required conditions, and to record in terms of weight and measure the results obtained. But to make this apparatus in the best form, and to provide the means of recording, may take a year or more, and in making this preparation a dozen problems will come up to be solved by other experiments. You are pretty sure to discover something new, but by no means sure that it will be what you began to seek. Every discovery opens new questions and indicates new experiments, and the precise shape in which the work presents itself varies with place and season.

We cannot foresee precisely the demands which will be made upon us, or which we shall make upon ourselves, but we do know that we shall want some large rooms in which a dozen or twenty men can be at one time taught how to investigate, working under the eye of an instructor; and also a number of small rooms, each fitted for the work of one or two men who have attained a certain degree of skill, and are engaged in original research. In all of these rooms we shall at times need to use microscopes, gas-heating, and steam; there will be vapors and fumes produced; there will be delicate instruments scattered about, and the rooms must, therefore, be light, have abundance of gas, steam, and water, hoods and flues for conveying away fumes, and they must have plenty of fresh air without dust.

Many of the things that will be seen through the microscopes will be rapidly changing form, and we shall need pictures as well as descriptions of their different shapes.

The most useful drawings for our purposes are those made by sunlight, and, therefore, we want photo-micrographic rooms.

We shall wish to test the merits of various articles of house-equipment, such as different patterns of steam radiators, of traps, of sinks and closets, etc., and for this purpose we must have places where they can be fitted and put into use.

We must know what other investigators in other laboratories, and many places besides laboratories, have done and discovered, that time and effort may not be wasted. We must, therefore, have the books and journals in which these are recorded, which are already many, and coming rapidly. A small library and reading-room is therefore essential.

Much of the apparatus to be used must be either made or specially fitted and adjusted on the spot to meet special indications which it is impossible to foresee, and, therefore, we need a large workshop, with tools and appliances for working in wood, glass, and metal, and with power.

Let us now look for a moment at the plan of the building, and see how all these things, and some other needs, have been provided for. Entering the building from Thirty-fourth Street, on the west front, we find, on the main floor on our right, that part of the building which is more especially intended for the use of those not working in the research-rooms, but coming in from the Arts or Engineering and Architectural Departments of the University for special lectures and demonstrations. This contains a lecture-room and class-room, a room for preparing apparatus, etc., for demonstrations, a small museum-room, and the janitor's office. The lecture-room is fitted with various devices for experiments and demonstrations upon different methods of heating and ventilating assembly halls, such as school-rooms, churches, theaters, including means for propulsion or aspiration of air, for introducing and removing it at various levels, etc.

On the left of the vestibule are doors which separate the laboratory and research part of the building from the semi-public portion just described.

Passing through these, we have in front of us the

large chemical laboratory in which the students are to be made practically familiar with methods of examining air, water, foods, soils, etc. Next to it is the balance-room. Then come, on the north front, four special research-rooms, and on the south one research-room and a large drafting-room for the preparation of drawings and plans relating to heating and ventilation, house-drainage, sewerage, and water-supplies.

The radiators in the large chemical laboratory on the north front are each of a different pattern, and so arranged as to permit of the testing of the relative efficiency of each, or to permit of the substitution of other forms for such testing.

Ascending to the second floor, the outlines of which are the same as those of the first, we find, over the chemical laboratory, a large bacteriologic laboratory well lighted from the north, with working places for twenty students.

On this floor are five research-rooms, the photograph and photo-micrographic rooms with dark-rooms, the director's room and private laboratory, a library and a supplies-room.

The basement contains a large, well-lighted workshop, a combustion-room, a cremating furnace, a boiler-room, and an engine-room, and rooms for the janitor.

I will not go into details as to the purposes and uses of the various flues, hoods, pipes, and valves which you will see in every room. It is sufficient to say that they are designed not only for the convenience and use of the workers, but for experiments and demonstrations of many kinds.

The drainage of the building is on a double system, and is so arranged as to permit of the trial of new forms of traps, sinks, closets, etc. All pipes are freely exposed to view, and the different systems for cold water, steam, drainage, etc., are each painted a different color.

When you visit the Laboratory—as I hope you will do not only immediately after these exercises, but many times in the near future—you will see more clearly its arrangement than you can from a mere inspection of the plans.

As regards the external appearance of the building, opinions will, of course, differ. I will only say that it has been planned from within outward, which is the reason why it looks like a laboratory and not like a castle or a cathedral; and there is very little useless exterior decoration. Sky-lines and projections or recesses to obtain shadows have not received much consideration; space, light, and adaptation to the work to be done have been the points insisted on.

In many respects it affords a striking contrast to the library building in which we are assembled, and it is fit and proper that it should do so. The library represents the garnered experience and wisdom of the past; the laboratory is the workshop of the future. One is fruit, the other is seed.

In this connection I wish to express my high appreciation of the important work of the architects, Messrs. Collins & Autenrieth, of this city, in preparing the plans and specifications for this building and in supervising its construction, and especially to thank Mr. Collins for the many valuable, practical suggestions which he has made as the result of his careful study of our purposes and needs.

So much for the building and its contents as it is, and why it is as it is. The chief object of its existence is to fit a certain number of men from all parts of the country to investigate and solve the problems connected with the securing of the best health and vigor among our people.

We hope, also, that some increase of knowledge will be made here by the workers in the Laboratory itself; but the main point to be kept in view is to provide well-trained, scientific, and practical men for other fields of labor. Dr. Mitchell has said that the true rate of advance in medicine is not to be tested by the work of single men, but by what the country doctor is. So, also—and even more so—advance in practical sanitation is not to be measured by laboratory records, but by what health officers and sanitary engineers are able to accomplish.

Even now we *know* much more than we *do*, and the skilled sanitarian too often finds himself in the position of the unhappy daughter of Priam and Hecuba, who could foretell, but to no purpose.

This Laboratory is fortunate in being closely connected with, and in the immediate vicinity of, a great medical school, and of great hospitals. As was said before, one of the essential foundations of scientific knowledge of the causes of disease is minute and accurate diagnosis and pathology, and we are, therefore, in constant need of the best knowledge of leaders in these branches of medical science. The hospital is filled with specimens of the results of such causes, acting on the human body—from one point of view, Nature's experiments with poisons cunningly elaborated in the tissues of the body, or with viruses coming from without, upon blood and bone, muscle and brain. Much of the work of this new department will be connected with the results of these experiments.

The Laboratory is also fortunate in being located in a great manufacturing city, where the effects of different occupations, of trades dangerous or offensive by reason of dusts, or of vapors, or of waste-products, can be readily observed and the materials for study obtained. There is an immense field for a sanitary clinic here, and in the habitations, the streets, the water-supply, and the sewers of Philadelphia.

These clinics, however, cannot, as a rule, be reported for the press, either lay or medical, since to do so would, to a great extent, defeat their object; the great majority of sick houses and manufactories must be considered as strictly private patients, and their affairs held as confidential. In the case of public institutions, or of public nuisances, a somewhat different rule may apply.

Practical hygiene is to play an important part in municipal government, to secure the best form of which is now one of the most urgent questions of the day. Many of the questions to be decided by city officials as to water-supplies, sewage-disposal, etc., require expert knowledge to answer.

Of course, the subject of hygiene and the work of a University department devoted to the increase and diffusion of knowledge in sanitary science extend far beyond the experiments and demonstrations for which this Laboratory is specifically fitted.

Bacteriology, chemistry, pathology, physics, and medical and vital statistics give us the foundations, but

sociology and jurisprudence must also be studied in their relations to sanitation to obtain the best results.

It is in and to the home and the workshop that these results are to be applied, and he who aspires to be his brother's keeper must know how his brother lives.

Labor questions, education questions, maritime and inter-State commerce questions, and methods of municipal finance and government are all intimately connected with matters of personal and public hygiene; and economic consequences, as well as health, must be considered in the advice and regulations of the sanitarian.

I count it as fortunate, therefore, that there is a law school and a school of finance and political economy in this University to which the Department of Hygiene can look for advice and friendly criticism when these are needed, as they surely will be.

And now a very few words as to the needs of the Laboratory. First of all it needs men—men thirsting for knowledge, and fitted by previous training and education to come here and acquire that knowledge, not merely the knowledge that exists in books or that the teachers in this Laboratory may possess, but that which is yet unknown, the weight of that which no one has yet put in the balance—the shape, and size, and powers for good or evil of things the existence of which has not yet been demonstrated—men who will patiently and earnestly seek the answers to the questions, "what?" "when?" and "how?" in the hope that thus they may by-and-by obtain some light upon the more difficult problems of "whence?" and "whither?" even if they may never be able to answer "why?"

There are not many such young men whose tastes will be in the direction of these lines of research, and of these there will be very few who will have the means to support themselves while engaged in the work. We need, therefore, the means to help them in the shape of half a dozen fellowships, paying about five hundred dollars a year each, and granted only to those who give satisfactory evidence of capacity and zeal.

The second thing we want is a demand on the part of the public for really skilled, well-trained sanitary investigators and officials, such as we hope to send out from here; we want a market for our product; we want the legislators of this and other States, and of our rapidly growing municipalities, to be educated to appreciate the importance and practical value of such health officials, and to give the best of them employment.

Thirdly, the Laboratory wants the coöperation and assistance of sanitary authorities and inspectors, and especially of those of this city and State.

It needs to know from time to time what they are interested in and are working at, to have the opportunity of showing to its students cases of special interest—sick houses, localized epidemics, special forms of nuisance.

And, on the same principle and for the same reasons, it desires to have its attention called to special methods of heating, ventilating, and draining buildings, and especially public buildings, such as schools, hospitals, prisons, churches, and theaters, and to matters connected with the hygiene of manufacturing establishments and special occupations, methods of disposal of offensive or dangerous waste-products, of protecting workmen against dusts, gases, etc.

In short, we want to know how these things are managed by the men who have a practical interest in them; and if, in our turn, we can suggest improvements, we shall be glad to do so.

Fourth, the Laboratory wants a reference library as complete as it can be made, and always up to date. Many of the books and journals required must be purchased, and for this purpose a special fund is needed, but many of the works required can only be obtained by gift.

Thus, we want all the reports of boards of health—State and municipal—of municipal engineers, waterworks and water commissioners, park commissioners, etc.

We want the catalogues and circulars of all manufacturers of heating and ventilating apparatus, of plumbers' supplies and house fixtures, of electric and gas fixtures, of machinery and apparatus connected with water-supply and sewage-disposal.

We want copies of plans and specifications of large buildings of all kinds.

And these things can only be obtained through the aid and good-will of manufacturers, engineers, architects, and sanitarians all over the country; and this aid I venture to ask, feeling sure it will be granted by those who know what is wanted.

I will mention but one more special want to-day, and that is of means for the proper publication of illustrated reports and accounts of the work done in the Laboratory.

In the meantime we must be patient, and not too eager to touch the fruit of the blossom that is not yet blown.

In the chambers of this Laboratory are to be explored and tested some of the strangest and subtlest of the manifestations of force which surround and are within us.

Here we are to deal with problems of life and death; to seek to unravel some of the webs which bind and choke our children, and which make our strong men helpless, that we may for a time, at least, put these trammels aside, or sever them.

I dare not attempt to promise or to prophesy as to the work which will be done here, or as to the future of this new department of the University.

Those who are to be connected with it may not do the best that can be done, but at least they must do the best they can, and, if needful, give place to others who can do better.

Those to whom we owe this Laboratory and its equipment and endowment, have been generous and wise in their generosity, which has been in accord with the teaching of the son of Sirach, "Having grace in the sight of every man living, and detained not for the dead."

Death comes by many paths to one or other of the three porches of the microcosm through which he enters, and brings his poppy flowers to all doors soon or late; but if we knew that which we might know, and did that which we might do, he would be preceded by fewer heralds of suffering, and would arrive only when we were ready to be "hushed in the infinite dusk."

If "ye shall know the truth, the truth shall set you free"—not free from change, or from grief, or from the final passage beyond the veil, but free from causeless

fears, from unnecessary pain, from useless labor; and this is a part of that wisdom "which passeth and goeth through all things," and is "the brightness of the everlasting light, the unspotted mirror of the power of God."

ORIGINAL LECTURE.

LINEAR CRANIOTOMY.

A Clinical Lecture delivered at the Arapahoe County Hospital, October 9 and 16, 1891.

BY CLAYTON PARKHILL, M.D.,
OF DENVER, COLORADO;
PROFESSOR OF ANATOMY AND CLINICAL SURGERY IN GROSS MEDICAL COLLEGE; VISITING SURGEON TO ST. LUKE'S, DEACONESS, AND ARAPAHOE COUNTY HOSPITALS, ETC

THE boy to be operated upon to-day presents the following history, taken from the case-book of Dr. Eskridge, under whose care he has been for the last four weeks: L. A., four years of age last February, began having spasms when two days old, which lasted four days. After this he had whooping-cough for four months. One year ago he commenced failing. After the spasmodic seizures, he would be unable to get up for a week. These attacks occurred one or two weeks apart. Six months ago they became very severe and increased in frequency, often occurring two or three times a day. He would fall on the right side of the face, and the mother thinks that the right leg was affected. The examination of the eyes was made by Dr. Chase.

You see that the boy is fairly well grown and well nourished. The only abnormal condition that we observe is that the head is not developed in proportion to the size of the body. In other words, this child presents a condition known as microcephaly, or he is a microcephalic child. There are two theories regarding the beginning of this condition—one is that there is premature ossification of the cranial bones, thus preventing the proper development of the brain; the other is, that there is an imperfect development of the central nervous system, and that the cranial bones share in this condition, whatever may be the cause giving rise to it. The fact remains that the cranium is too small.

Lannelongue did the first operation for the relief of microcephalus. The procedure consisted in removing a narrow strip of bone from one side of the skull, making of the cranial bones two lateral flaps, which might be extended by the growing brain. He called this operation craniectomy. Keen has followed him, and has proposed the name of linear craniotomy, which I consider the better term for it. When the term "ectomy" is used in connection with an operation, it signifies a complete removal of the organ spoken of. In this operation we do not attempt to remove the cranium, but only make an incision into it and remove a small portion; so that I believe the term linear craniotomy, which signifies only a lateral incision into the cranium, much the better term.

The original operation has been modified in two instances by Wyeth and McClintock. They removed a strip of bone on either side of the median line, prolonged the incision laterally at each end of this longitudinal incision; and, in addition, made lateral incisions in the middle line toward the ears. They then separated the bones forcibly, thus widening the gap. In view of the mortality which has attended the operation thus far, I scarcely think that we are justified in making such an extensive operation. Horsley believes, that owing to the imperfect development of the nervous system, children are much more liable to shock than they would normally be, and so, with reason, advocates a single operation, as proposed by Lannelongue, and that is the method of procedure which we will adopt in the case before us. I might say, further, that during the time that this child has been in the hospital, every attempt has been made to develop his intellect by teaching, and it has been found impossible to add even the simplest word, the name of the commonest object shown to him, to his vocabulary. Had we found it possible to teach the child anything, it might have been wiser to attempt that method rather than to proceed to such radical measures as we shall institute.

This child has been carefully prepared for the operation. His scalp was shaved yesterday, thoroughly scrubbed with soap and water; afterward with ether, and finally with a solution of 1 : 2000 mercuric bichloride. The head was then bound up in a towel saturated with the mercuric solution, which you see is still in place. We will now remove that and measure the scalp. Ether has been used as the anesthetic and the child is now perfectly under its influence. From the inion to the glabella is ten and three-fourths inches. The biparietal diameter measures six inches. The circumference of the skull is eighteen and three-fourths inches. We will repeat the process of cleansing practised yesterday. Around the side of the head we will wrap a towel wet with a hot bichloride solution and under the child's head we will place a rubber bag filled with hot water. Mr. Horsley believes that it is possible in this way to lessen the shock. Fifteen minutes ago he was given five drops of tincture of nux vomica and a dram of whiskey to give still further support to the nervous system. And now we are ready to operate. I make an incision about three-fourths of an inch to the right of the median line, beginning at the anterior margin of the hair-area, and extending backward to within about one inch of the inion. We have comparatively little bleeding from the skull, as you will observe, because I have taken the precaution to have the temporal artery compressed. We catch the spurting arteries with forceps, and but little blood, as you see, has been lost. The periosteum is now exposed and I will make a single incision through it. I draw aside the periosteum in the same manner as I did the scalp, and we now observe the cranial bones. I apply a three-fourths inch trephine midway between the parietal eminence and the sagittal suture in the median line of the head. I remove the button of bone and you see I have not wounded the underlying dura mater. This bone is peculiar in that it is thinner than normal, not measuring more than one-eighth of an inch in thickness; and, again, it presents no diploic structure. With the Keen forceps I enlarge this trephine opening forward, making it taper to one-quarter of an inch at its anterior extremity, which corresponds with the scalp-incision. I prolong the opening backward in a similar manner, to within about an inch and a half of the inion. You will observe that the inci-

sion is elliptical in shape, measuring three-fourths of an inch wide at its widest point and tapering to either end, and having a length of about six and one half inches. The dura mater is bulging at the bottom of the wound and is rather dark-colored; otherwise apparently normal. With a pair of scissors I now remove a portion of the periosteum corresponding to the bony wound. I will irrigate the wound with a solution of mercuric chloride 1 : 3000, to wash away the fragments of bone left there. Drying it slightly with gauze, I sprinkle it with iodoform and am ready to close the wound, which we will do by means of interrupted silk sutures. I place these sutures one-half an inch apart anteriorly, and three-fourths posteriorly. You will observe that I have made no provision for drainage, but should necessity require it, the wound will drain between the sutures posteriorly, which have been placed so far apart. We will now again sprinkle the scalp with iodoform and apply an antiseptic dressing. The child has borne the anesthetic well and seems to be in good condition, and will now be sent to bed. From the time of the beginning of the anesthetic we have occupied about thirty minutes.

It is my privilege to present to you to-day the child upon which we operated one week ago, and we will dress the case now for the first time. You will observe that the child seems brighter and its appearance is better than before the operation, and he seems to more fully comprehend what is said to him. It is the opinion of the nurses and of the child's mother that his mental condition shows improvement. He has been decidedly less restless and nervous than he was before the operation, sitting sometimes for hours in his bed amusing himself with books in looking at the pictures. His physical condition has been exceedingly good. At 7 P.M. of the evening on which we operated, his temperature reached 100⅘°. From that time it began to decline, reaching normal the following morning. At no time since has it been above normal. He has slept well and has had a good appetite. I will now proceed to remove the dressing. I uncover the wound and you will observe that we have union by first intention. There is no swelling and not a sign of suppuration. I did not intend to remove the sutures for a day or two yet, but the condition is so good that I will take them all out. We will now wet the scalp with a mercuric solution, dress it with iodoform, and again apply our antiseptic dressing. Instead of the bandage to retain this in place I have had a cap made which answers the purpose much better. I will send the child back to its bed, and will tell you something of the other cases following operation.

Four cases have been operated on by Professor Keen. One died one and one-quarter hours after the close of the operation, from what was supposed to have been heart-failure. Another died four hours after the operation. The other two cases recovered and have shown mental improvement. The case of Gerster and Sachs died three and one-half hours after the operation, of acute anemia. Wyeth's case has greatly improved in intelligence. McClintock's case was reported too soon for the operator to decide whether there was improvement or not. Morrison's case showed decided improvement. And these comprise the operations that up to this time have been reported in this country. Horsley operated on two cases in England. One case died a few days following, from a condition of hyperpyrexia. The other case recovered, and showed very decided mental improvement. Lannelongue has reported twenty-five cases with but one death, and in those surviving the operation there has been improvement.

At the recent Congress of American Surgeons, at Washington, Professor Agnew, basing his opinion upon the operations that had been done in Philadelphia alone, decided that the procedure would "confer no credit on surgery." Taking into consideration the result of all the operations that have been done, I cannot agree with even that distinguished surgeon. Of these forty-one cases, five have died and thirty-six have shown mental improvement to a greater or less degree. I doubt whether any method of training that has yet been devised can take forty-one cases and show mental improvement in thirty-six of them. "But," you say, "five have died." Under methods of teaching, I believe you will find a larger number than that will fail to respond; and who can say that, for these little creatures, having no possibilities of intellectual development, death is not preferable to life?

The operation is yet new, and none of these cases have been under observation a sufficient length of time to know how much improvement we may get. The case that I have shown you is the first that has been operated on in the West, and we can only hope that it will continue to improve as much as it promises to do.

CLINICAL MEMORANDA.

A CASE OF AKROMEGALY.

BY H. A. HARE, M.D.,
PROFESSOR OF THERAPEUTICS IN JEFFERSON MEDICAL COLLEGE.

SINCE 1886, when Marie first described the curious disease known as akromegaly, a number of cases have been reported, and in some instances it has been possible to accompany the reports with the results of autopsies, which have quite constantly shown lesions of the pituitary body. In view of the numerous papers that have been published upon the subject in the last few months, I shall simply report this case without comment, in order to put it on record. The patient continues under my care, the disease progressing very slowly indeed.

A. M., a woman, aged twenty-five years, a Canadian by birth, has a good family history, and cannot remember that any of her relatives died of malignant disease. Three years ago, her menstruation became exceedingly irregular, stopping at times, and remaining absent for from four to six months. At this time she also noticed that vision began to fail, but more recently the failure has been rapid, and when she came under my care, December 12, 1891, she had become completely blind in the left eye. She states that the loss of sight began in the outer half of the left eye and gradually proceeded across the eye until the vision was entirely lost. Her right eye has also failed markedly in visual power since she has entered the hospital.

Physical examination shows a slight distention of the abdomen, with a general increase in the size of all of the members. There is a peculiar hump in the back from the last dorsal to the seventh cervical vertebra, and this

deformity seems to be characteristic of all well-defined cases. On the anterior surface of the chest, at the third interspace on the right side, there is a bulging half-way between the sternum and the nipple line, as large as an ordinary orange; it seems to be due to an increase in the length of the third and fourth ribs that project further than their fellows. There is no exostosis. Similarly, on the left side, the floating ribs are equally protruding, making a swelling as large as would be that produced by a fetal head if placed beneath the tissues. The hands are increased in size, and there is not only an increase of the connective tissues of the entire body, but also of the bony tissues. The nose is very much enlarged, and the face is massive in appearance. The limbs are also very much thickened, and her appearance is that of a large woman unequally developed. During the last three years, or since the beginning of her illness, she has gained about sixty-five pounds in weight, and I have been fortunate enough to obtain from her a photograph taken before she was ill, and another taken within the last two weeks. Engravings made from them are appended herewith. A comparison of these pictures indicates very thoroughly the great increase in dimensions that the patient has undergone. She has very distinct enlargement of the thyroid gland, but there are no associated circulatory disturbances. For the last few weeks she has suffered severely from neuralgia of the right temporal and supra-orbital region, which becomes very much worse at night, and at times sufficiently severe to prevent sleep. There have also been sharp pains in the extremities, and slight, varying pre-tibial edema. The appetite is good; the urine is rather scanty in amount. Examination of her right ear shows that she has lost hearing on this side, and that there is a chronic purulent otitis media. At the time of admission into the hospital the patient complained chiefly of pain in the left knee, loss of vision in the left eye, and of the absence of menstruation—indeed, she believes that the entire cause of her trouble is due to this latter disorder. She has suffered very much indeed from flashes of heat, which lasted ten or fifteen minutes, and then rapidly disappeared. At the angle of the left scapula, and extending to the vertebra, there is a spot where there is a peculiar itching, which changes to a prickling or tingling sensa-

FIG. 1.

FIG. 2.

tion upon pressure. About October 1st the patient had a hemorrhage from the lungs, and one week later suffered from an attack of epistaxis. The bowels are fairly regular.

Dr. D. D. Stewart, the chief of the nervous clinic of the Jefferson College Hospital, has been kind enough to send me the following account of the electric condition of the muscles and nerves in this patient:

FACIAL NERVE.

Faradic (Flemming's battery).

Switch on button 1, coil fully in: Response in upper facial muscles only, R. and L. side.

Coil out 2 in.: General response both sides.

Galvanic.

Right—Ca Cl c 2 M.a. . . . upper facial muscles.
" " " c 4 " . . . general.
Left— " " c 2½ " . . . upper facial muscle.
" " " c 5 " . . . general.
Right An Cl c 3 " . . . orbicularis palpebrarum.
" " " c 5 " . . . general.
Left— " " c 3 " . . . orbicularis palpebrarum.
" " " c 6 " . . . general.

UPPER EXTREMITY.

Faradic.

Shoulder and upper arm muscles: Switch on button 2, coil all in; electrode on motor points R. and L. side, very good response.

Extensors of forearms: Good response on both sides with switch on button 1, tube out 1½ in.

Flexors, forearm, respond with less strength of current. Current also diffused to them from extensor surface of forearm, causing response in flexors of fingers, with current too weak to cause contraction in extensors.

Galvanic.

Response produced with less current in flexors than in extensors of forearms.

In flexors, Ca Cl c 3 M.a.
" " " c 4 "
" An Cl c 8 "

ANTERIOR CRURAL NERVE.

Faradic.

Switch on button 1, coil out 2⅛ in.: Slight contraction in muscles supplied, on R.; on L. some contraction with coil out 1½ in.

Galvanic.

Right—Ca Cl c 10 M.a.; An Cl c 12 M.a.
Left— " " c 10 " ; " " c 12 "

SCIATIC NERVE.

Faradic.

Switch as before, coil out 2 in.: Contraction better on R.

Galvanic.

Right—Ca Cl c 10 M.a.; An Cl c 12 M.a.
Left— " " c 10 " ; " " c 12 "

The results of the electric examination indicate a normal qualitative response in all parts tested, but somewhat altered quantitative reaction—chiefly in the direction of delay, especially in the thighs.

The slow clonic response to the continuous passage of the faradic current noted some days before in the quadriceps extensor femoris on the R. was also seen in the middle finger of the R. hand in stimulating the extensor communis digitorum.

A study of the blood has been made by Dr. D. B. Kyle. The number of red blood-corpuscles was 4,700,000 to the cubic millimeter, with about 11,000 white corpuscles in the same space. The estimation of the hemoglobin by means of Fleischl's hemoglobinometer gave a practically normal percentage. The red blood-corpuscles are very much crenated and irregular in shape, many of them seeming to be poorly developed. They also appear to contain small particles of pigment; but it is impossible to decide this point positively. Owing to the peculiar formation of the corpuscle the black spot may be due to refractive conditions. This latter theory seems probable in view of the fact that on dissolving the corpuscles with distilled water these pigment-spots also disappear.

Dr. Hansell, the chief of the ophthalmologic clinic, has kindly sent me the following report of the examinations of the patient that he has made. It will be noted that a tumor of the pituitary body might very readily produce the ocular symptoms:

$$V = R, \frac{20}{XXX}; L, 0.$$

There is *total atrophy of the optic nerve* of the left eye with paralysis of the superior oblique (?). The muscle involved is doubtful on account of absence of light-perception. The disc is white, with a shallow cup.

The optic nerve in the R. is pale, with a shallow cup, but not including the entire disc. There is a small spot of pigment in the retina in the upper and inner quadrant.

The R. pupil is normal in its reaction to light and to accommodation.

The L. pupil does not act alone, but only in harmony with the movements of the R.

The field of vision for white is concentrically contracted, more marked upward, downward, and to the temporal side than on the nasal side.

There is a slight central color-scotoma, most marked for green.

Some three weeks after the first examination, vision in the R. was reduced to $\frac{20}{XXX}$ partly, and the field of vision had contracted.

A UNIQUE CASE OF POLYPUS OF THE CERVIX UTERI.

BY HANNAH M. THOMPSON, M.D.,
OF WILMINGTON, DEL.

THE following case of cervical polypus has been under my observation for about twelve years. The past seven years I have had almost exclusive charge of the case. The patient is an unmarried woman, and was about thirty years of age at the first appearance of the polypus, or of the diseased condition that preceded its development. Previous to this there was a history of failing general health for several years, and for three or four years preceding the typical growth, local treatment had been resorted to for a congested and retroverted uterus, with cervical catarrh and endometritis.

The cervicitis and endometritis improved under treatment, but there was no permanent restoration of the displacement or of the impaired circulation.

The date of the first appearance of the polypus is not clear, on account of the difficulty of early diagnosis.

After wearing a Hodge pessary for several months, without other treatment, a change for the worse was ushered in by a profuse hemorrhage from the uterus.

There was also associated great constitutional prostration, and especially nervous and cerebral irritation. Upon an examination at this time, the cervix presented a nodular, purplish appearance, suggesting a forming abscess; the external os was soft and velvety; the lining membrane of the cervix was sensitive to touch, bleeding excessively when touched. There was no other appreciable lesion, either in the cervix or in the uterine body, with the exception of the retroversion. The hemorrhage persisted for several months, with but short periods of cessation, and in spite of various alterative and astringent remedies. Dr. Charles H. Thomas, of Philadelphia, then had charge of the patient, and to his kindness I am indebted for an early observation of the case while a student at the Woman's Medical College.

Suspicious that the growth was of a malignant nature, Dr. Thomas, at different times, called two or more distinguished gynecologists in consultation. Malignancy was ruled out, but no positive opinion was offered.

One specialist suggested varix of the cervix as a possible diagnosis. During one of these consultations, the cervix was incised laterally through what appeared to be a hemorrhoidal or varicose tumor. This threw no light upon the case, except to reveal a very vascular condition. The hemorrhage was alarming at the time, and continued greater than before the incision, with little intermission, for several weeks.

Within the sinus that remained after the incision, fungous growths or projections now sprang up from time to time. These appeared to be the source of the hemorrhage. It was at this time also observed that at certain periods there was a soft, pulpy growth protruding from the external os. Under Dr. Thomas's treatment the patient improved in general health, but the metrorrhagia and other typical features of the case were only temporarily alleviated.

In the latter part of 1888, the case came more directly under my care, and I had then the opportunity of a more careful study of its obstinate features. There was still metrorrhagia—not so profuse as in the beginning—but I found that it was *periodic*, confined to about a week or ten days of the intermenstrual period, and that the nervous disturbance was greatest at this time. The *periodicity* of the different features was so marked as to attract my attention from the beginning. I found that exactly two weeks from the beginning of the monthly period there was an intermenstrual cycle as follows:

A very appreciable softening of the cervix; a flow of blood varying in amount (the past two years often greater than the monthly flow); slow dilatation of the external os; and in a few days a protrusion from the external os of a polypus, generally not larger than a good-sized pea. Accompanying this there was regularly a decided constitutional paroxysm lasting a week or more. This consisted of excessive nervous irritability, insomnia, with throbbing and distress in the head so great that the patient feared it would affect her mind. There was no imagination about this, as her appearance indicated suffering and painful nervous strain. These reflex symptoms constituted the most distressing feature of the case, as they yielded little, if at all, to medication. They were out of all proportion to the local lesion or pelvic irritation, and entirely different from the ordinary nervous symptoms of the monthly period. After the polypus protruded, the nervous symptoms abated, without removal of the growth.

The polypus would remain *in situ*, bleeding more or less for four or five days. It would then shrivel up and disappear, leaving the cervix, to all appearance, in a natural condition. An examination at this time would disclose nothing abnormal but a retroverted uterus. The week before, as well as about ten days or two weeks after menstruation, no growth was discernible and but rarely any hemorrhage after its disappearance.

I found, as had Dr. Thomas, that strong applications of iodine, carbolic acid, chromic acid, as well as positive electricity, would destroy the growth and occasionally prevent its formation for the subsequent month, but there was no stamping it out entirely. Surgical methods were tried with but little better success. Not only thorough dilatation and curetting of the cervical canal and internal os were tried, but at one time the base of the polypus was cut out entirely, and the underlying surface cauterized with strong acid. I found the polypus was attached by a broad pedicle—it seemed almost to be a part of the *substance* of the cervix—to the lateral wall of the cervix, midway between the external os and the internal os.

After the above operation, there was no return of the growth for two months. There was, however, some bleeding at each intermenstrual period. There was also partial relief from the peculiar reflex symptoms, but so much prostration followed the operation that it was decided not to repeat it. The treatment has since been simply palliative.

The polypus or polypi, for it sometimes appeared as if there were more than one, has continued to appear and disappear as described, with almost unvarying regularity, for at least *ten years*. The retroversion, which was always an additional cause of suffering and probably the starting-point of the disease, could not, on account of adhesions, be entirely corrected.

There is now, I think, a promise of cure with the establishment of the menopause. The first intimation of this change, three months ago, passed by without menstrual or intermenstrual period, but in place nervous disturbances occurred indicative of the menopause. The following three months the menses appeared regularly, as well as the intermenstrual growth, larger than at any time previous. There is now again a period of rest from both, showing conclusively, I think, that the termination of the menstrual cycle will break up the curious intermenstrual phenomena of this case.

What, then, are the peculiar features of the case?

1. A regular intermenstrual congestive paroxysm, with decided local and constitutional symptoms and the development of a lesion, extending over a period of at least ten years.

2. The obstinate nature of the growth—returning over and over again after thorough removal.

3. Its shrivelling up and disappearance without interference, after four or five days of maturity, followed by closure of the os.

4. The reflex symptoms, fully illustrating the effect of pressure upon or irritation of sympathetic fibers, are peculiar in their character and severity.

I find the literature upon this subject is exceedingly meager, throwing but little light upon the pathology of such growths. Some authorities describe a species of vascular polypus formed from development of the blood-vessels. Thomas says these are probably only a form of the cellular or mucous variety.

Emmett's "mucous polypi developed from enlarged Nabothian follicles," conform to the appearances in my case, but he says they are generally present near the menstrual period, and though occasionally returning, are curable. These are frequently met with in practice and are not generally obscure or obstinate. Hart and Barbour, in their classification of polypi, describe a form anatomically distinct from the mucous variety and which they name "pediculated cystic follicles." They are the result of chronic catarrh of the cervix, are bluish-red polypoidal projections, formed from obstructed Nabothian follicles, and are often accompanied by metrorrhagia. In my case there is no doubt but that the disease and the growths were cervical in their origin, as on microscopic examination they presented the characteristic columnar non-ciliated epithelium of the cervix, besides dilated glands.

The question arises, as in the case of all polypi, whether they were the cause or only the result of the inflammatory change.

Dr. Howard A. Kelly, who saw my patient in consultation more than once, was especially interested in the case, as he is engaged in making a special study of these intermenstrual phenomena. Dr. Kelly advised a thorough application of the galvano-cautery as offering the surest method of cure. It was postponed on account of the patient bearing operations badly, but I was about ready to give it a trial when the hopeful prospect indicated came to our rescue.

ERYSIPELAS APPEARING IN THE COURSE OF PUERPERAL PYEMIA.

BY W. REYNOLDS WILSON, M.D.,
OF PHILADELPHIA.

THE following case illustrates the probable identity of the cause of pyemia and that of erysipelas. There has been much discussion upon this point, and the report of this case may add some weight to the facts that have already been collected. The question as to whether in the present instance the erysipelas was an accidental condition can be decided only by a careful study of the history of the case, which is as follows:

The gravida, a primipara, aged twenty-three, was first examined on the 23d of September, four weeks before the time of her confinement. The record of her pregnancy shows nothing unusual, except that during the last two weeks she complained so much of pain in the lower part of her abdomen and on either side during exertion that she was withdrawn from the work that had been assigned her in the domestic arrangement of the hospital. Her labor was natural, the first stage lasting seventeen hours, the second two hours, and the third, terminated without the aid of artificial compression, forty-five minutes. There was no unusual loss of blood and no rupture of the perineum. The child weighed 8¾ pounds.

On the second day after confinement the patient suffered from a chill that lasted twenty minutes, followed by the subjective symptoms of beginning infection. Objectively, the fundus of the uterus was found on a level with the umbilicus and the uterus flabby and tender. The lochia were suppressed. The patient was put on quinine and an intra-uterine douche of 1 : 8000 bichloride was given. The temperature remained elevated, and intra-uterine douches, preceded by vaginal douches of creolin, were ordered to be given three times daily, and the ice-bag was applied over the fundus. On the evening of the fourth day, the patient suffered from another severe chill, followed by the appearance of tympany and great tenderness in the lower part of the abdomen. The intra-uterine douches were discontinued, and flaxseed poultices were used in place of the ice-bag. The pain was relieved by opium suppositories. During the course of the next two weeks, the patient suffered from an attack of pelvic peritonitis, the temperature ranging about 104°. During this time, the uterus, on examination, was found well contracted and held by adhesions toward the right side, so that it presented a hard tumor occupying the right hypogastric region. This tumor corresponded to a resisting mass that filled the right vaginal vault. The os was directed toward the left and showed a diphtheritic membrane extending into the cervical canal. On the morning of the fourteenth day, after the administration of calomel, the tympany subsided and the temperature fell to 102⅖°. The patient's general condition, however, remained unimproved. At the end of the second week of illness, a swelling of the left labium majus, accompanied by pain and redness, occurred. This disappeared in a few days, and was followed by a circumscribed patch of similar appearance on the right shoulder. This latter area was sharply circumscribed. During the next few days, similar patches appeared upon the thighs and in the tibial region. Their appearance was sudden and accompanied by sharp pain. The temperature remained elevated, and the patient showed extreme exhaustion of the nervous system.

These areas of infiltration were attributed to pyemic emboli, which were confined to the subcutaneous tissue. An examination of the heart and lungs revealed no signs of pulmonary or endocardial affection the result of emboli.

On the evening of the twentieth day, after a gradual defervescence, the patient's temperature rose to 102°; at the same time a swelling of the lobe of the left ear was noticed. This swelling rapidly increased, involving the ear, the malar and palpebral regions, and assuming a reddish and then a deep-purple color. The edge of the infiltrated area presented a distinct zone of demarcation. The character of this area upon its first appearance naturally led to the conclusion that the same cause was here effective as in the erythematous patches of the subcutaneous tissue noted. But gradually the appearance changed to that of a frank, characteristic erysipelas, accompanied by the usual systemic manifestations. This

attack subsided on the sixth day, with resorption of the infiltration and disappearance of the discoloration. This area, as well as those first mentioned, after the disappearance of the swelling, was the seat of furfuraceous desquamation.

The course of this case is of great interest in its pathologic aspect. In the first place, the infection was probably active from the beginning, the localized peritonitis being the expression of a general process, and the seat of invasion being the endometrium. The form of infection was no doubt dependent upon septic rather than putrid poisoning. This is proved by the absence of necrotic endometrium in the washings from the uterus and of offensive odor of the lochia. These facts are in accordance with what is known of the processes of infection from the endometrium. These processes are divided, according to the description of Bumm, under three heads: Putrid, localized septic, and general infective septic. In the first two a limiting zone of small-celled infiltration cuts off the affected endometrium from the muscular layer of the uterus, while in the last two no such zone is present and the infecting germs find their way into the lymphatic system without the intervention of any reactive process. The general infection in this case was complicated by the dislodgment of septic thrombi, which found their way into the circulation, producing the pyemic condition.

It remains to discuss the etiology of the erysipelas.

The similarity on the one hand between the erysipelas and the areas of embolic origin, considered as to the conditions under which they both appeared, lead us to infer that they were both due to the same cause. On the other hand, the extensive spread, the characteristic color and demarcation, and the course of the erysipelatous eruption warrant the diagnosis of true erysipelas. If we hold to the former inference, we would be adopting the more generally accepted view, namely, that of the identity of the streptococcus of erysipelas (Fehleisen) and the streptococcus pyogenes. The appearance, however, of the eruption upon the face instead of the genital region is contrary to this view, and might lead us to infer that the erysipelas was due to some other source of infection than that of the pyemia. This, however, is doubtful, as the history of the case shows that the patient before her confinement was not exposed to any source of infection, and the strict isolation that was observed during her illness made exposure after her delivery impossible.

PASSAGE OF A RENAL CALCULUS BY THE BOWEL.

By I. W. GOOD, M.D.,
of Spring City, Pa.

I was sent for on the morning of August 17, 1891, to see L. G., thirty-five years old, a married stove-mounter, of temperate habits. On my arrival I found the patient suffering from what he described as "cramps," from identical "spells" of which he had suffered frequently for quite a number of years.

The symptoms were those of renal colic, and indicative of the presence of the foreign body in the right ureter. The attack had set in three days previously, gradually increasing in severity. It had been noticed that the attacks were increasing in frequency, intensity, and duration, so that for some time the man had had in readiness opium in grain doses for the relief of the paroxysms.

The characteristic symptoms of the passage of a renal calculus were present: retraction of the right testicle; pain shooting from the right loin to the testicle of the same side and to the penis; considerable nausea; frequent micturition, with the escape of but a few drops of urine at a time. The pain was agonizing; the body was bathed in a profuse perspiration; the tongue was clean; the pulse between 56 and 60, soft and thready. There was no elevation of temperature; the bowels acted, the discharges being natural; the urine, on standing, deposited uric acid. The patient was measurably relieved by repeated hypodermatic injections of morphine.

Sodium benzoate was ordered in 15-grain doses, three times a day, with potassium bitartrate as occasion required to keep the bowels active and to favor elimination by the kidneys. Opium was given in grain doses every hour or half-hour, as required. The ingestion of liberal quantities of water and milk was encouraged. A warm hip-bath was ordered night and morning. The case pursued an uneventful course for several days, the patient not being entirely relieved. Thinking that possibly the manifestations might be malarial and neuralgic, several full doses of quinine sulphate were given, with the result of producing only the symptoms of cinchonism. As stated, the urine contained crystals of uric acid, but no blood.

The patient was able to arise from bed; the pain had somewhat abated; there was no elevation of temperature; the pulse ranged from 65 to 100; the appetite remained poor, and the tongue was heavily coated. Sleep could only be induced by opiates. At this juncture a tender spot, about one and a half or two inches in diameter, in the course of the right ureter, apparently near its entrance into the bladder, was detected, but no induration or redness was apparent. The patient was more comfortable with the right thigh somewhat flexed as he lay upon his back. The bowels were moved about every second day, and the stools were natural.

On the morning of the 29th I was hurriedly summoned, and found that the patient was entirely free from pain; the tenderness in the course of the ureter had in a great measure subsided; the man had enjoyed natural sleep during the night, and felt better in every respect; but he was alarmed by the character of his urine. On the morning of the previous day he had eaten a small piece of corn-fritter. His bowels were moved but a short time before he had sent for me, but unfortunately the stool was not accessible to inspection.

Shortly afterward he found that urination was obstructed, while there was a sensation of an accumulation near the urinary meatus; by straining and manipulation he at last expelled a grain of corn. The urine voided subsequently was found to have a horribly offensive odor and to contain fecal matter. Opium was ordered in sufficient quantities to check peristalsis, and in the hope of preventing the development of peritonitis. The patient was advised to lie on his back as much as possible, to reduce to a minimum the admixture of the contents of the intestine with the contents of the bladder, with the development of cystitis. An absolute milk diet was directed, and all excitement absolutely inter-

dicted. I was convinced that the calculus, by reason of its size, had become impacted in the ureter, which by adhesive inflammation had become attached to some part of the intestinal tract; subsequent ulceration had afforded the stone exit by the bowel.

I deemed it best to employ expectant treatment. The patient was much annoyed by frequent acts of micturition and by excessive tenesmus. The stools presented a urinous odor. For ten days more fecal matter continued to escape by the urethra. Opium suppositories and starch enemata were employed to allay the tenesmus. Following the enemata the urine responded to the tests for starch. Subsequently the urine became freer from fecal matter, though it contained pus and was highly ammoniacal. There were tenderness and irritability of the bladder, symptomatic of cystitis—for the relief of which sodium benzoate and turpentine were successfully employed. At the end of the third week of the symptoms of recto-ureteral fistula, the condition was in all respects much improved. At the end of the fourth week the patient sat up in a chair. For several weeks some tenderness persisted in the course of the ureter over the probable situation of the communication with the bowel. The evidences of such communication ultimately disappeared entirely.

MEDICAL PROGRESS.

Bronchiectatic Cavity due to Impaction of an Intubation-tube.—Sutherland (*Lancet*, No. 3569, p. 188) has recorded the case of a man, seventeen and a half years old, in which, after a blow upon the neck below the chin, pain developed, with difficulty of swallowing. In the course of a week the temperature rose, the voice became husky, and breathing became noisy and embarrassed. Suffocative attacks set in, with cough and the expectoration of considerable frothy mucus. Laryngotomy was performed, but afforded only temporary relief, so that subsequently intubation was practised. During a paroxysm of coughing, the string attached to the tube broke and the tube passed into the trachea. Efforts to remove the tube were unsuccessful. For a time the patient did so well that it was thought the tube might have been swallowed and voided by the bowel, but subsequently the symptoms returned in an aggravated degree. During a violent attack of cough, the patient perceived a sensation as of a moving body in the chest. He could only occupy the dorsal decubitus. Evidences of the formation of a bronchiectatic abscess appeared, for the relief of which pneumotomy was performed, but without the discovery of the foreign body. The patient progressively grew worse and died after repeated hemorrhages. At the autopsy, the intubation-tube—two and a quarter inches long—was found in the left bronchus, where it had given rise to a bronchiectatic abscess. The lumen of the larynx was narrowed. It is conceived that the primary injury had involved the pneumogastric nerve and had also given rise to a traumatic laryngitis. For three months the intubation-tube had lain in the trachea, where its presence was tolerated, until during a violent paroxysm of cough, the tube became dislodged, entering the bronchus and giving rise to the subsequent train of symptoms and fatal issue.

Resection of the Stomach for Carcinoma of the Pylorus.—At a meeting of the Royal Society of Physicians of Vienna, v. Hacker (*Wiener klin. Wochenschr.*, 1891, No. 47, p. 888) presented a woman, twenty-five years of age, in whom eight weeks previously resection of the stomach had been performed for the removal of an obstructive tumor of the pylorus. The patient had for nine months complained of epigastric distress, accompanied by pain and aggravated by taking food, and of characteristic vomiting several hours after meals, with emaciation. The vomited matter contained sarcinæ, but no hydrochloric acid. The tumor was palpable in the epigastrium and left hypochondrium; it was apparently from two and a half to three inches in length; no nodules could be felt. When the abdomen was opened, it remained doubtful whether the mass was carcinomatous or cicatricial. Several enlarged glands were detected in the omenta, and careful inspection disclosed the presence of a number of miliary nodules on the apparently smooth anterior surface of the tumor. By tearing the small omentum with dissecting-forceps and introducing a finger behind the stomach, it was found that the growth was not adherent posteriorly. After the resection had been performed, the mucous surfaces were approximated by continuous sutures, the sero-muscular coat by interrupted sutures and a few Lembert sutures. The operation occupied two hours. The subsequent course of the case was undisturbed. In three weeks the patient was able to get out of bed; in four weeks she was dismissed. Following the operation she gained four pounds in weight. On microscopic examination of sections of the resected portion of the stomach and of one of the enlarged glands removed, the growth was found to be a glandular carcinoma.

Local Anesthesia.—At a meeting of the Berlin Medical Society, Schleich (*Berliner klin. Wochenschr.*, 1891, No. 51, p. 1202) reported the successful performance of two hundred and twenty-four minor and major operations—including sequestrotomy, herniotomy, laparotomy, amputation of fingers, suture of the patella, radical treatment of hydrocele, extirpation of tumors, and nephrorrhaphy—by means of local anesthesia. It was found that but small quantities of cocaine were required for the induction of local anesthesia if considerable quantities of water were injected, so as to cause generous infiltration of the tissues. To obviate the pain of puncture, a spray of ether is first applied. The needle of a hypodermatic syringe is then introduced, parallel with the surface, beneath the papillary layer of the cutis, endermatically, and a small quantity (three or four minims) of a solution of cocaine (gr. $\frac{1}{10}$ to f$\bar{3}$j) injected. The procedure is repeated throughout the area to be operated upon, the little nodules formed mutually touching at their periphery. According to the depth of the proposed incision, layer after layer of tissue is treated in a like manner, even down to the periosteum, the bone, and the osteo-medullary cavity. A two per cent. solution of potassium bromide or of caffeine may be substituted for the solution of cocaine. The essential factor in the development of the anesthesia is the infiltration of tissue. The largest dose of cocaine required in any case in which it was employed was a little more than half a grain.

Cretinoid Idiocy with Pachydermic Cachexia.—At a meeting of the Medical Society of Hamburg, EISENLOHR (*Deutsche med. Wochenschr.*, 1891, No. 47, p. 1293) presented a girl, fourteen years old, without hereditary or family predisposition, who, it was stated, presented no abnormality until she was seven years old, when it was observed that there was a retardation of mental and physical development, together with an increase in the volume of certain parts of the body. In the course of time, the sides of the neck, the face, the forearms, and the hands became thickened and enlarged; fatigue was readily induced; intellectual activity became dwarfed; digestion was deranged; vomiting occurred and constipation developed. The girl at fourteen appeared no larger than a girl of seven; the head was large and brachycephalic; the nose was flat; the extremities were ungainly; the abdomen was prominent; the tongue was thick; the hair was red and rough; the teeth were imperfect. The skin of the face and hands was tense and doughy, presenting an appearance resembling edema, but suffused. Soft masses were palpable beneath the skin of the neck and in the supra-clavicular regions. The thyroid gland could not be detected. The urine contained no albumin. The fontanels were closed. There were no hernias. Intellectual development was defective. The patient's extent of language was small. Her appearance, however, was not idiotic.

Successful Treatment of Suppurative Phlebitis of the Internal Jugular Vein and the Lateral Sinus.—PARKER (*Liverpool Medico-Chirurgical Journal*, No. 22, p. 44) has recorded the case of a man, twenty-five years of age, who for eleven years following an injury in the region of the left ear, presented symptoms of suppurative otitis media, with perforation of the tympanic membrane. Symptoms of suppurative phlebitis of the left lateral sinus and internal jugular vein, with double optic neuritis, developing, an incision was made in the mastoid and infra-auricular regions, and the mastoid process was opened. A clot was found in the facial and jugular veins, extending into the lateral sinus, which was occupied by greenish purulent lymph. Ligatures were applied to the veins on either side of the thrombi, and the intervening portions excised. The lateral sinus was partially scraped. Hemorrhage was controlled by a plug of antiseptic wax. The symptoms disappeared for two days after the operation; then the temperature rose to 103°. The wax plug, with some accumulated pus, was removed from the sinus, and the mastoid cells were irrigated. For nearly a week the temperature continued to oscillate between high figures, but finally subsided, the case ultimately progressing to a favorable termination.

THERAPEUTIC NOTES.

Benzol in Influenza.—ROBERTSON (*British Medical Journal*, No. 1621, p. 171) recommends the employment of benzol in the treatment of influenza—as he has likewise found it useful in the treatment of whooping-cough. The symptoms of the disease are speedily and favorably influenced, and pneumonia seems to be prevented. Benzol can be dispensed in capsules or in mixture, in doses of three minims for children and five minims for adults, every two or three hours. The following formula may be employed:

℞.—Benzol. pur. . . . . ♏lxxx.
Spts. vini rect. . . . f℥ss.
Spts. chloroformi . . . f℥iij.
Mucilag. tragacanth. . ad f℥viij.—M.

S.—A dessertspoonful or a tablespoonful at a dose, to be taken in lemonade.

Tuberculin in the Treatment of Leprosy.—KALINDERO and BABES (*Revue de Médecine*, 1891, No. 10, p. 817) have reported the employment of tuberculin in the treatment of eleven cases of various forms of leprosy. They found that the general reaction set in about twenty-four hours after the injection. Sometimes a second and a third reaction followed on successive days. Rapid repetition of the injections was followed by cumulative action. In some cases of tuberculous leprosy, small doses were followed by intense and protracted reaction. Local reaction was slight or wanting; exceptionally, it was intense and extensive; it manifested itself by injection of the infiltrated areas and the slow formation of crusts, with desiccation; the general condition was improved, though weakness resulted.

Potassium Permanganate as an Antidote to Phosphorus.—At a meeting of the Royal Society of Physicians of Budapest, BOKAI (*Deutsche medicin. Wochenschrift*, No. 47, p. 1294), as a result of chemical investigation and experiments upon animals, commended from one-fifth to one-third of one per cent. solutions of potassium permanganate as an antidote in cases of poisoning by phosphorus. Phosphorus in the presence of potassium permanganate is converted into innocuous orthophosphoric acid in the stomach, with the development of manganese chloride. Poisoned dogs thus treated were saved; untreated dogs died. Even one per cent. solutions of potassium permanganate exerted no injurious effect upon the coats of the stomach.

For Sore-throat.—

℞.—Cocainæ hydrochlorat. . gr. viij.
Acid. carbolici . . . ℥j.
Glycerini . . . . f℥iv.
Aquæ rosæ . . . ad f℥xij.—M.

S.—To be diluted with an equal quantity of water, and used alternately as a spray and gargle. WHITLA.

For Tapeworm.—One of the best remedies for the expulsion of tapeworm from the intestinal canal is the oleoresin of male fern. After the usual preparatory treatment by low diet and catharsis, two drams of the oleoresin of aspidium may be whipped up with the yolk of an egg and peppermint-water, and syrup added to make two ounces; the whole being taken in the morning, on an empty stomach; and, if necessary, followed by a purgative.

For Incontinence of Urine.—

℞.—Tinct. nucis vomicæ . . f℥vj.
Ext. damianæ fl. . . . f℥ijss.
Glycerini . . q. s. ad f℥iv.—M.

S.—℥j three times a day, after meals, in a wineglassful of water. WHITLA.

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SATURDAY, FEBRUARY 27, 1892.

THE RETAIL DRUGGIST.

FROM a widely-distributed advertisement we quote the following paragraphs taken from the *Druggists' Circular* for September, 1890:

"COUNTER-PRESCRIBING.

"In this and other States there are very stringent laws to prohibit counter-prescribing by druggists, and as our medical brethren have spies constantly on the lookout, and a number of arrests have been made, it is of the greatest importance that all pharmacists should be on their guard. There is, however, no law under which a druggist could be arrested or fined for selling a friend or customer what they called for, and in order to meet this difficulty a little book entitled *A Medical Manual for the Treatment of Simple Diseases* has been carefully prepared.

"This work, which is carefully arranged in alphabetical order, gives the patient all the information he would most likely ask the druggist for, and which the pharmacist is not now in many places allowed to supply orally.

"The publication of this useful and valuable book is one of the most important events in the drug trade that has transpired in many years."

Following this announcement, there are full directions as to securing the book at the rate of one cent each, the same retailing "at 25 cents, this price being so printed on it."

Now, it may be said that this is really so contemptible as to be beneath notice; that too much splutter has been made about the counter-prescribing of druggists; that the physician ignores the pharmacist's side of the question, etc. But taken in connection with other aspects of the drug business it may be answered that it is easy to make a mistake in the attitude of disdainfully ignoring such evidences of the degradation of a once noble profession.

Because, taken up in a large way and carefully examined, the multiple evidences of this degradation are but too painfully patent. The worse than commercialization of the standing of the retail druggist is a sorry fact. Here and there—one or two in every city, perhaps—there remains a druggist respecting himself, his own profession and that of medicine, who, refusing to turn his store into a "soft drink" saloon or junk-shop, preserves the tradition of better days and the isolation of dignity in distress. His smart neighbor, who has adopted the modernized fashion, smiles derisively at the old-fashioned way, and slowly crowds the antiquarian out of existence.

And the new-fashioned way—What is it? Nay, rather should we not ask, What is it not? To attempt an enumeration of the multiplicity of articles or classes of articles, the Noah's ark of odds and ends, would tire an auctioneer. The ten-thousand-dollar soda-water fountain is the *pièce de résistance*, fast progressing to the lunch and coffee counter, and to mysteries beyond the comprehension of the uninitiated. Queensware, bric-a-brac, and infinite *olla podrida*, dispute with patent medicines galore the places of honor. Find the prescription department if you can and dare!

Some time ago THE NEWS pointed out certain reasons why physicians should dispense their own medicines. The considerations then adduced looked only to the good of the medical profession and the duties of the physician to the patient. But observation of the position of self-degradation of the druggist emphasizes the advice. Certainly any protest of the druggist is summarily stopped by—

1. The common practice of counter-prescribing and the suspicion of sneak authorized by the foregoing quotation from the *Druggists' Circular*.

2. The farcical commercialization of the profession and the omnium-gatherum type of the modern fizz-water-buffet-tobacco-shop-queensware-jewelry-what-you-please drug-store.

3. The patent-medicine disgrace, in which crime against civilization the druggist has become a chief abettor and agent.

4. The adulteration and impurity of the drugs kept, as proved by the late investigations of the New York State Pharmaceutical Association.

There is another reason that will in the future continue more powerfully to hasten the downward progress of the druggist's calling as a learned profession. This is the gathering of the art of compounding drugs into the hands of the manufacturing chemist, and the resultant concentration of this function under the control of a few large firms. Machinery, centralization, systematization, and the progress of pharmacology, have made it possible to compound vast quantities of almost every conceivable prescription with an accuracy that is greater and at far less expense than is possible in the case of a single prescription for a single patient. The wholesale manufacturer, moreover, passes by and over the retail druggist, supplies the physician directly, and the physician, finding it to his own benefit as well as to that of his patient, will more and more supply his patient at first hand.

There may be sad disadvantages in the outworking of this tendency, and many serious questions and difficulties will doubtless arise. It is barely possible that the better class of pharmacists may refuse to follow the drift of tendency, and heroically stemming the tide, in part and to a certain extent, rescue their calling from threatened degeneracy. It is doubtful, however. Young men with the capacity and high-mindedness to uphold the elder tradition will hardly ship on a vessel so rotten-timbered and strained. Already the profession of pharmacy is considered but a temporary makeshift, a half-way house. The course in pharmacy lessens the regular medical course of study by one year. It would be interesting to know how many matriculants of medical colleges have first served in the drug-store.

OPENING OF THE INSTITUTE OF HYGIENE OF THE UNIVERSITY OF PENNSYLVANIA.

THE NEWS herewith presents its readers with the Address of DR. BILLINGS, delivered last Tuesday, at the opening ceremonies of the Institute of Hygiene of the University of Pennsylvania.

Whether intentional or not, there was a subtile and genuine significance in choosing February 22d as the day for inaugurating the Institute. In its final analysis and outcome, Democracy, of which the United States is certainly the champion and example, must mean health. That, of course, means health for all, because, as science now well knows, there can be no certain and enduring health for any class or any person unless the health of the lowliest and the remotest citizen of the country —nay, of the world—is also assured. No science better than medicine illustrates and proves the great doctrine of the solidarity of the human race. Politically, that is the lesson of democracy, and it therefore argues well for us that so early in our country's history, by boards of health—municipal, State, and national—and by institutes of preventive medicine, we are manfully grappling with our tasks and duties to our fellow-men, present and to come. At first blush it would seem a shame that, as a community, we do not recognize the obligation, but stupidly wait for private generosity and institutional self-sacrifice to do that which Government should long since have done. DR. BENJAMIN LEE ironically referred to this sad aspect of the matter, the aristocratically governed peoples of Europe being protected by a thousand wise safeguards against adulteration of foods, pollution of water, etc., and enjoying myriad hygienic advantages over ourselves. But it should not be forgotten that as yet we are only experimenting with civilization and government, that, intoxicated with our own youth and surplusage of strength, we leave the rascals to cultivate the art of plunder, instead of attending ourselves to the serious art of governing. If, in this mood, every city and State had a laboratory of preventive medicine, Hygeia would probably soon become a very leprous goddess. The political boss and the scientist would be a very mismatched pair. For a considerable time we must yet await the recognition, on the part of the public, of its duty both to preventive medicine and to itself, and also the possibility of successful realization of any practical work in that field. The great difficulty in getting the paltriest appropriation from the politicians proves how far we still are from communal action. In the meantime, all discriminating minds should help pay the debt of gratitude the City, State, and Country owes to the nobly beneficent men who have presented the people with such a Laboratory, and to the great educational institution that guarantees its work and future usefulness. A fuller endowment is still needed, and more important even than endowment is coöperation and practical helpfulness on the part of all.

THE MUTUAL AID ASSOCIATION OF THE PHILADELFHIA COUNTY MEDICAL SOCIETY.

NONE that will read these lines can be ignorant of how precarious is the professional income of medical men, and how few are the opportunities of accumulating money in medical practice. Many will be able to recall the cases of practitioners that during life had labored arduously and, removed prematurely or in old age by death from the midst of their families, had left those that had been dependent upon them without adequate means of support. Recognizing these facts, associations have been organized in England and in the United States with the object of providing for indigent widows and children of deceased medical men, as well as for such physicians as by accident or adversity have lost their own means and powers of support. In the spirit of this movement and with these nobly philanthropic motives has the Mutual Aid Association of the Philadelphia County Medical Society been organized. As the president of the Association has well said, membership constitutes not insurance, but charity. It is hoped to establish a permanent fund of a hundred thousand dollars to be derived from the philanthropic, both within and without the medical profession. Members of the County Medical Society may become members of the Mutual Aid Association by paying an initiation fee of five dollars and an annual fee of five dollars for ten years or ten dollars for five years; by paying fifty dollars in one sum they become Life Members. Anyone that pays a hundred dollars becomes a Benefactor. In suitable cases, as soon as a sufficient fund has been accumulated, an annuity of four hundred dollars will be paid to the widows of members and one hundred dollars to each child. The Association is most economically conducted. It has practically no expenses. All of its income is devoted to the Permanent Fund. Every physician should indorse the work of the Association by at once becoming a member or by contributing directly to the Permanent Fund. The general community can in no better way testify to its appreciation of the labors of a self-sacrificing profession than by meeting with a full and generous response its appeal for funds in a noble cause.

The members of the profession in every part of our country should establish similar societies.

In evidence of the practical working of the movement under consideration we refer to the report presented at the annual meeting of the subscribers to the British Medical Benevolent Fund, held in January, according to which, during the year 1891, nearly $9000 was distributed in grants among 159 persons and a like sum among 99 annuitants.

MEDICAL SOLIDARITY OF THE RACE.

PHILOSOPHERS and moralists have long been in the habit of emphasizing the great fact that the life of the world is a unit, and that all biologic facts and phenomena are mutually interdependent. The profundity and reality of the truth have been obscured by the vagueness of the generalization. Civilization has often given convincing examples of the fact, but there is none more striking than the conveyance of contagium along lines of travel. Before the development of the marvellous means of quick intercommunication, there was less danger of the transfer of disease-germs than now, when localization of disease of any kind grows more and more difficult. That we have to become responsible for disease generated ten thousand miles from us, among people whose national names and languages sound most strange to our ears, is a fact that comes vividly before us as we consider the typhus fever pest brought to our homes by the poor Russian refugees. One steamer alone has sown ninety-six cases of typhus among our Eastern cities. The greatest energy and severest caution are demanded. The physiologic sins of these far-away folk are visited upon us. We at once become interested in the most lively way in the social and economic life of an oriental and semi-barbarous people. It becomes our duty and self-interest to see to it that the bad life *there* is made more healthy and normal, in order that the better life *here* be not morbidized.

It also cannot be held an unjustifiable extension of the thought that the application of the principle of the solidarity of the human race is not limited to aspects simply physiologic or pathologic. Pathology and pathogeny are preaching the preacher's text more powerfully than he could prophesy or foresee. The brutal edicts of Tsars and race-hatreds forcing famishing men to cast themselves by thousands upon our shores, bringing with them malignant disease to scatter broadcast amongst us, are also consequences flowing from other factors than physiologic ones. We become interested in lessening those governmental, aristocratic, and irreligious deviltries that make up much of what is ironically termed Russian civilization. Whether by huge portfolios of petitions, by magazine publications, or

by the persistent effect of national diplomacy and influence, democratic America is vitally concerned in curing, civilizing, and democratizing sick, barbaric, and tyrannized Russia.

IN NEW YORK

THEY have a medical periodical, *The Post-Graduate*, the anonymous editor of which is deeply interested in his own "great medical discovery ignored," consisting in the important pathogenic fact that at the very finest restaurants of New York the cooking is bad, the table and food poorly served, etc.; just around the corner more "toothsome" food is to be had. In this and other medical matters the editor breathlessly seeks to be pert rather than pertinent, curt rather than courteous, and he evidently is thoroughly satisfied with his success. His devotion to the interests of the medical profession is shown by a defence of the hospital-charity abuse, and his knowledge of medicine by the ludicrous assertion that a mydriatic is not at all necessary for the accurate estimation of errors of refraction; the use of a mydriatic, he asserts, being an "ancient practice."

It is the commonest experience of the ophthalmologist that his patients remain strangely unconscious of high degrees of astigmatism and ametropia. How frequently likewise we stumble on the analogous illustration of mental astigmatism, emotional myopia, moral strabismus, or other like sorry type of psychic ametropia, amblyopia, or restricted field —all with delicious innocence of incongruity; in the same way that humor is most perfect when the comic source is self-confessedly most serious and goes about with most gothically arched eyebrows.

But in New York, as we know, they have also many sincere men and good physicians; from them, if desired and if possible, the excellent lesson might be learned that flippancy is not irony, that conceit is not good manners, and that, exceptionally, post-graduate wisdom may be undergraduate nonsense. This is also "*very, very true.*"

In sword-lore there is a legend of a blade so fine and so sharp that, with a good blow, a man's head could be severed from his body and not be displaced, and the man remain in ignorance of the fact—so long as he kept right still and did not cough. It would seem that fatuous superciliousness may clumsily perform hari-kari of this peculiar and extreme kind in ignorantly attempting to wield the dangerous weapon of modern medical criticism. We write with the kindliest intent, and only to caution our hari-karicaturist that after such superb swordsmanship there is great danger in coughing.

SELECTION.

TYPHUS FEVER IN NEW YORK.

THE most serious outbreak of typhus fever that has occurred in the country for many years, became known to the health authorities of New York late on the night of February 11th, and on the following day no less than fifty-eight cases of the disease were discovered. On January 30th the French steamer "Massilia," of the Fabre line, arrived with 717 steerage passengers. Two hundred and fifty of these were Russian Hebrew immigrants who were aided by funds provided by Baron Hirsch, and they were first transported from Odessa to Constantinople, whence they hoped to be able to go to Palestine and settle. Being disappointed in this, through the action of the Turkish authorities, they came to Marseilles, where they embarked on the "Massilia," together with a considerable number of other immigrants of various nationalities. The steamer on January 1st took on board more than 200 Italians, and on January 12th she sailed from Gibraltar. On the ship's arrival eleven passengers were ill, three of them with what was believed to be typhoid fever, but which, as the sequel shows, was undoubtedly typhus.

On the day following, February 12th, eleven additional cases were discovered among the Russians. Every effort was made to trace the Italian and other immigrants who came on the "Massilia," but it was found that many of them had left the city. On February 13th, five additional cases of typhus were found among the Russians from the "Massilia;" February 15th, seven more cases; February 16th, six cases at Oakdale, Mass.; and each day is adding to the list. There are, at time of writing, eighty-nine cases at North Brothers Island.

The whole country is more or less alarmed and disturbed, and really in a certain measure endangered by the living freight which this steamer has been allowed to land upon our shores after it had been refused the hospitality of the intelligent Turk.

We have thought it worth while to put together the main facts in the case as an illustration of the daily folly which we, as a nation, are permitting to be committed in the beautiful name of freedom, to the relief of other countries, the profit of a lot of steamship companies, the gradual degradation of our population, and the positive diminution in the safeguards for life, liberty and the pursuit of happiness which those already living here would like to be assured of. We open our doors to squalor and filth and misery—which mean typhus fever—and we admit leprosy, almost as if these things were blessings in disguise.

The reports of the Treasury Department show that for the last six months of 1891 the number of immigrants coming from Russia (Poland excepted) in those months was 46,710, as against 20,934 in the corresponding months of 1890. The whole number of immigrants was greater in 1891 than in 1890 by about 100,000, and

nearly half of this increase is ascribed in the reports to Russia and Poland.

As sanitarians, with this text before our eyes, we desire to add our indignant protest to that expressed by the eminent statistician, Gen. Francis A. Walker, in a recent lecture against the results of our immigration laws. There are times when charity should begin at home.—*Boston Medical and Surgical Journal.*

CORRESPONDENCE.

CHICAGO.

Dr. W. M. Tomlinson—Improvements in the Northwestern University—The Alexian Brothers' Hospital—New Laboratory of Rush Medical College—Dr. Bayard Holmes on Infectious Filth Diseases.

DR. W. M. TOMLINSON, Registrar of Vital Statistics in the City Health Department, has resigned that position after seven years' service, to devote his entire time to the practice of medicine. Dr. Tomlinson was appointed by Mayor Harrison in his last term, and was so efficient in the discharge of his duties that he has stayed through Republican and Democratic administrations until the demands of his private practice have compelled him to give up his official position.

Many new buildings are needed for the various departments of the Northwestern University. The medical and pharmaceutical departments are to be the first schools favored with a new structure. The plans for a $100,000 building have been accepted by the board of trustees of the university, and when the Fall term of 1892 commences the structure will be ready for occupancy.

The site of the new building, which will be occupied by the medical and pharmaceutical departments, is located on Dearborn Street, sharing the block of 450 feet between Twenty-fourth and Twenty-fifth Streets with the new Wesley Hospital. The plans are for a structure of stone and brick, 110 by 105 feet ground dimensions, and its four stories and basement will make a total height of 75 feet. The entire department of pharmacy will be quartered in the new place, and all the laboratories of the School of Medicine will be situated here. At present the University Medical School is located at the corner of Prairie Avenue and Twenty-sixth Street. This building is to be remodelled, and the school will continue to use it for college purposes after the completion of the Dearborn Street building.

The twenty-fifth annual report of the Alexian Brothers' Hospital shows 2109 patients admitted to the hospital in 1891, and 1408 sent out as cured. Only 150 patients died. A large amount of charity work was done during the year, there being 827 charity patients treated. Dr. A. J. Baxter, of the surgical department, has retired; and Drs. F. Henrotin and J. B. Murphy have been appointed surgeons. Drs. J. H. Hoelscher and F. W. Rohr have been appointed to duty in the medical department.

Rush Medical College is to have a biological and pathological laboratory, to cost $50,000. The faculty has raised the necessary funds, and the laboratory will be built during the coming summer, and be ready for occupancy in the Fall. One of the most important departments in the laboratory will be the department of bacteriology. One of the faculty stated that the position of director of the laboratory would be filled by a well-known European bacteriologist. At a recent meeting of the faculty replies to letters sent out to famous European specialists inviting them to suggest some celebrated bacteriologist for the place were read. From the names suggested the faculty will, at a subsequent meeting, select a man who has a world-wide reputation. The bad sanitary conditions in many of the large cities long ago demonstrated the wisdom of making the study of bacteria a feature of the course at Rush, and the bad sanitary condition of Chicago was one of the reasons urged for the establisment of the laboratory and a professorship of bacteriology.

Dr. Bayard Holmes, in a recent lecture before the Evolution Club on "The Evolution of Disease," said: "The infectious filth diseases are the most destructive diseases that man is heir to. Of all these filth diseases we are perhaps most interested in typhoid fever. Typhoid fever is due to a bacillus, rather shorter and thicker than the bacillus of tuberculosis. The microorganism lives readily upon all kinds of filth, animal and vegetable material, and even in water which contains a small amount of dissolved organic substances. It has been found in drinking-water and in ice, and when it grows in sufficient abundance it gives off a by-product called nucleine, which, when taken into the system, after the microbe itself has been killed, produces a transient form of the typhoid disease.

"Diphtheria is due to a bacillus that is found only upon the mucous membrane of man and the lower animals. It is saprophytic or putrefactive in that it grows readily upon all nutrient material, such as potatoes, bread, paste, and gelatin.

"Cholera is a filth disease due to the invasion of the body by a bacillus which resembles the other putrefactive bacteria. The cholera-germ grows readily in or on animal or vegetable matter, and in water that contains only a small amount of organic substance in solution.

"Malaria is due to infection of the blood with a living animal parasite called the plasmodium of malaria. It belongs to the order protozoa. This parasite inhabits the circulating blood, and can be seen moving about in the red blood-corpuscles themselves at certain times in the course of the disease. This organism has not been grown on any artificial culture media, though it is supposed to be an inhabitant of marshes and wet, undisturbed soil. There are a number of other filth diseases —cholera infantum, for example—but it is tiresome to hear of so many. They are all alike in being due to the infection of the tissues of the body, or the invasion of the organs of the body, by microörganisms that lead lives wholly independent of man, or live only partially dependent on man as a messmate. That is to say, they are due to organisms not necessarily parasites. If man insists on drinking out of his cesspool or catch-basin he will expose himself to yellow fever in Vera Cruz, to cholera in Calcutta, to malaria in New Orleans, and to typhoid fever in Chicago.

"In regard to the prevention, extermination, and amelioration of the suffering from these diseases the evolutionist and philosopher has much to say. The chronic

infectious diseases can be exterminated by an understanding of their origin, their source and method of contagion, and proper segregation of those invaded by the parasite. The vaccination of Jenner points to the remedy for the acute infectious disease. The filth disease, the concomitants of an imperfect civilization, will be exterminated by education and by cleanliness. In our grandfathers' day the itch went around every winter. It was a theme of polite conversation a few years ago. They spoke then of having the itch as we speak of having typhoid. It will soon become as embarrassing to say, 'I have just recovered from an attack of typhoid,' as it was to say, 'I am just getting rid of the itch.' As the family was the unit that perpetuated and exterminated the itch, so is the community the unit that perpetuates and must exterminate the filth diseases.

"It is possible that all the existing diseases are not yet recognized by the medical profession, but none not now existing will ever persecute man. Among the filth diseases, however, new diseases may arise. In the enormous accumulations of filth in the lake, extending a mile out and up and down the shore for twenty miles opposite this city, growing a few inches deeper year after year from the deposit of our enormous sewerage, some predominant saprophytic microörganism producing a very noxious ptomaïne may become partially parasitic, as the typhoid bacillus has, and give rise to a new disease endemic. If we can afford to have one or two thousand die in our city each year of typhoid, and about five or six times as many sick for two months each, we can afford to continue to pile up this filth in the bottom of the reservoir of our water-supply. There was a time in the history of the city when the doctors claimed that the wells were contaminated with typhoid, and urged that they be closed. Again those fanatical fellows besought the honorable guardians of the city's health to stop taking water from the river and from the lake at the foot of Randolph Street, and now some suggest that pure water cannot be obtained long even at the four-mile crib if the sewers are allowed to empty their contents into the lake.

"Let us stop our hysterical emotions and sit down and think. If a little education will exterminate the chronic infectious diseases, and education and cleanliness the filth diseases, let us go to work to educate the people. If the pests of childhood, the acute infectious diseases —scarlet fever, measles, and whooping-cough—can be ameliorated and practically exterminated by some form of preventive inoculation, let our benevolent people stop building hospitals and libraries for a year or two and build some laboratories for the study of preventive inoculation. The day is not far distant, in my opinion, when the acute infectious diseases will be exterminated; when a terminating inoculation will be practical for tetanus, diphtheria and pneumonia; when a great city will cease to make a cesspool of its water-supply and will spend less for its department of charities than for its department of health. The age of emotion will merge into the age of reason."

Orchitis following Influenza.—BRISCOE (*Lancet*, No. 3569, p. 192) reports the case of a laborer, thirty-two years old, in which, after an attack thought to have been influenza, orchitis developed, without other complication.

REVIEWS.

THE PRINCIPLES OF BACTERIOLOGY: A PRACTICAL MANUAL FOR STUDENTS AND PHYSICIANS. By A. C. ABBOTT, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. With illustrations. 8vo, pp. 263. Philadelphia: Lea Brothers & Co., 1891.

AMERICA has realized that the science of bacteriology is established upon a permanent basis. The evidence of the fact consists, not in the acceptance of the germ-theory of disease, but in the organization of departments for instruction in the methods of bacteriologic research. With this advance comes the necessity for suitable text-books, of which there are already numerous good ones, both in English as well as in foreign languages; but each teacher has some peculiar method of exposition, and finds that he can best reach his pupils if, in addition to his personal teaching, he can place in their hands a book of reference, so that the practical demonstration may be supplemented and fortified by liberal reading.

Dr. Abbott has succeeded in preparing a work which, though elementary in character, will adequately meet the requirements of the laboratory student and of the general practitioner who desires an intelligent familiarity with the subject. A course of a month or eight weeks in the laboratory will not make a bacteriologist. General principles, however, can be learned, and with these the general practitioner should be conversant.

Dr. Abbott wisely directs that the solutions of the anilin stains should, in general, be recent. It has not been our experience, however, that the carbolized fuchsin solution decomposes readily. On the contrary, we have no difficulty in successfully staining tubercle-bacilli with solutions several months old. We have found the method described by Gabbet as the simplest of application for staining cover-glass preparations of sputum—staining with carbolized fuchsin and decolorizing with a 25 per cent. solution of sulphuric acid containing a small proportion of methylene-blue. No alcohol enters into the process and the risks of decolorizing tubercle-bacilli are reduced to a minimum. Of experimental inoculation of animals, only the subcutaneous and intravenous methods are considered; reference to inoculation of the eye, of the serous cavities, by the digestive canal and by the respiratory tract is omitted. Illustrations of the more common and accepted pathogenic microörganisms might judiciously have been presented.

Dr. Abbott's book will prove a useful aid to those that desire a knowledge of the principles of bacteriology.

We append a letter received from Dr. Abbott that is self-explanatory:

To the Editor of THE MEDICAL NEWS,

SIR: If you can afford me the necessary space in your journal, I would like to call attention through its columns to several errors of omission that I find in my book, *The Principles of Bacteriology*, recently published by Lea Brothers & Co., of this city.

A number of methods of work as described and recommended in that book have, to the best of my knowledge, been developed in the pathological laboratory of

the Johns Hopkins University and Hospital, where I was formerly assistant, but I discover that in the haste of preparation I have failed to mention this fact in either the preface or body of the book. As some of these methods have never been described before, I think it only just that the men who originated them should have credit for their work, and I take this means of correcting what I consider a serious omission on my part.

For instance, on page 68, the method for the preparation of potatoes for cultivation in the test-tube was devised by Dr. Meade Bolton, while assistant in the above-mentioned laboratory; on page 88 the modification of Esmarch's method which consists in rolling the tube on a block of ice instead of in iced water, as Esmarch recommended, was first employed by Dr. W. D. Barker in that laboratory in 1887; the "acetic acid method" for staining the capsules surrounding certain bacteria (page 133) was suggested by Professor Welch. The suggestion in regard to movable false-bottoms for the hot-air sterilizers, with a view to economy and convenience (page 47); the employment of rosolic acid in cultures of growing bacteria as an indicator for the reaction produced by the bacteria (page 75), and the preparation of needle-points for the intra-vascular injections into the vein of the ear in rabbits (page 155), are my own.

In addition, it was in the same laboratory that Esmarch's statement that "agar-agar is not adapted for tubes which are to be called after his method" was demonstrated to be erroneous, and it was also there that the hot-water funnel was abandoned, and the ready and satisfactory method for the preparation of nutrient agar-agar, as described in my book, was developed.

It is true that laboratory methods of work are usually considered common property, and so they should be; but, as is well known, every laboratory has certain technical devices of its own, which may or may not be employed elsewhere, and which are believed by those using them to give the best results. Fundamentally, the technique given in *The Principles of Bacteriology* is that common to most bacteriological laboratories, but still there will be seen here and there through the book certain deviations from the prescribed rules, which are followed in the Baltimore laboratory, and which are believed to be of advantage in the proper performance of this work.

Most respectfully yours,

A. C. ABBOTT.

LABORATORY OF HYGIENE,
UNIVERSITY OF PENNSYLVANIA.

THE MICROSCOPE AND ITS REVELATIONS. By the late WILLIAM B. CARPENTER, C.B., M.D., LL.D., F.R.S. Seventh Edition: in which the first seven chapters have been entirely rewritten and the text throughout reconstructed, enlarged, and revised by the REV. W. H. DALLINGER, LL.D., F.R.S., etc. With twenty-one plates and eight hundred wood engravings. Philadelphia: P. Blakiston, Son & Co., 1891.

A BOOK that has passed through six editions, carries its own commendation with it. So many important changes have, within recent years, taken place in the department of microscopic research that to keep abreast of the times revision and addition became imperative. As a result of this revision and additions, the work before us is practically a new one. Great credit is due the editor for the masterly manner in which he has handled his subject and made a homogeneous whole of a vast mass of facts of diverse character. All that pertains to practical microscopy is here to be found expressed in clear and forcible language, profusely illustrated by a large number of well-executed cuts and plates.

That portion of the work that most interests the medical man—the study of normal and abnormal tissues and fluids of the human body, including the various pathogenic microörganisms and the differential modes of staining them—is deficient in some respects. We realize that a book on the microscope cannot well be also a work on histology, a work on pathology, and a work on clinical medicine; but such a book would have enhanced value if it dealt, if only in a general way, with subjects of which a knowledge essentially depends upon the employment of the microscope. Thus, there is no word of tube-casts in urine; nowhere do we find even the name trichina or actinomyces, while page upon page is devoted to the consideration of certainly less important animal and vegetable organisms.

Ten pages are devoted to schizomycetes, but we fail to find mention of the vibrio of cholera or of the spirillum of relapsing fever. Many pages are taken up with descriptions of the protozoa, but not a word is said of a malarial parasite.

Despite these rather exacting criticisms, the book remains a valuable source of reference, especially for the naturalist. It will also afford much useful information to all interested in the mechanism and employment of the microscope.

SAUNDERS'S POCKET MEDICAL FORMULARY. With an Appendix containing Posological Tables, Formulæ and Doses for Hypodermatic Medication; Poisons and Their Antidotes; Diameters of the Female Pelvis and Fetal Head; Diet List for Various Diseases; Obstetrical Table; Materials and Drugs Used in Antiseptic Surgery, etc. By WILLIAM M. POWELL, M.D. Philadelphia: W. B. Saunders, 1892.

ANY means calculated to impress the undergraduate, or the post-graduate, with the idea that medicine, and the art of therapeutics in particular, is to be learned from formulæ must be regarded as pernicious. Formularies as a part of text-books are objectionable enough, while there can be no legitimate excuse for the production of a work devoted solely to the presentation of pharmaceutical formulæ.

Therapeutics is an art, not a trade, the successful application of which depends upon an intelligent comprehension of the relation between pathological processes and the physiological actions of various medicinal agents, and not upon the mere mechanical administration of drugs, of which one is selected for the individual symptom, symptom-complex, or disease.

More harm is done by the blind employment of medicines than by their judicious withholding. In a given case more depends upon wise management than upon perfunctory prescriptions. What is now needed is a work directing the uninformed when not to give medicine.

That practitioner who cannot acquire a working knowledge of the practice of medicine without the employment of ready-made formulæ had better surrender his diploma

and take up some other mode of occupation for the successful engagement in which the broadest possible intelligence is not absolutely requisite.

A PRACTICAL RÉSUMÉ OF THE MODERN METHODS EMPLOYED IN THE TREATMENT OF CHRONIC ARTICULAR OSTITIS OF THE HIP. By CHARLES STILLMAN, M.D., Chicago. Detroit, Michigan: George S. Davis, 1891.

IT is well that the author of this work should state that it has been compiled from the writings of other orthopedic teachers, since it is made up almost entirely of extracts. It deals with the treatment of hip disease only from the narrow standpoint of a specialist, who seems to think that the sole treatment for this form of ostitis consists in the employment of some form of apparatus. A number of splints are described, but no general plan or outline of treatment is given, nor is there anything in the book to guide a practitioner even in the selection of an apparatus.

The book necessarily deals meagerly even with methods, but we think that some of the authorities named, Willard or Gibney for instance, would be very unwilling to have it considered that a splint occasionally used by them should be looked upon as "their treatment of hip disease." One of these writers, for instance, is quoted as employing this splint, when the publication from which the extract is taken distinctly states that it is chiefly used in non-inflammatory cases and in the later stages of the disease.

As a catalogue of apparatus rather than as a plan of treatment, the book is convenient; otherwise it is of little service.

NEWS ITEMS.

The Medical Association of Georgia will hold its forty-third annual session at Columbus, Ga., on April 20th, 21st, and 22d. Dr. G. W. Mulligan, of Washington, Ga., will preside. DR. DAN H. HOWELL, of Atlanta, Ga., is the Secretary.

The "Physician and Surgeon" of the January issue appears enlarged and improved. It, however, makes the mistake of printing advertisements in the context and interleaving advertisements among the reading matter.

Mütter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures under the bequest of the late Prof. Thomas Dent Mütter, M.D., LL.D., "On some Point or Points connected with Surgical Pathology," will be delivered in the winter of 1893–94 before the College of Physicians of Philadelphia. Compensation, $600. The appointment is open to the profession at large. Applications, stating subjects of proposed lectures, must be made before October 15, 1892, to WILLIAM HUNT, M.D., Chairman of the Committee on Mütter Museum, Thirteenth and Locust Streets, Philadelphia, Pa.

The Opening Ceremonies of the Institute of Hygiene of the University of Pennsylvania were held in the Library of the University at the Opening, February 22, 1892. These consisted of: Prayer—By the Rev. Dr. George Dana Boardman. Presentation of the new building to the Provost and Trustees—Dr. S. Weir Mitchell, Chairman of the Committee on Hygiene. Acceptance on behalf of the Provost and Trustees—Provost William Pepper. Address—Dr. Benjamin Lee, Secretary of the State Board of Health. Address—Dr. John S. Billings, Director of the Institute. Address—Dr. H. P. Walcott, President of the Massachusetts State Board of Health.

The Pan-American Medical Congress in New York State.—At a meeting of the Medical Society of the State of New York, at Albany, February 5th, a committee was appointed to coöperate in promoting the interests of the Pan-American Medical Congress. The committee consisted of Drs. A. Walter Suiter, A. Vander Veer, James D. Spenser, Seneca D. Powell, W. W. Potter, D. B. St. John Roosa, and John O. Roe.

BOOKS AND PAMPHLETS RECEIVED.

Botany: A Concise Manual for Students of Medicine and Science. By Alex. Johnstone, F.G.S. New York: D. Appleton & Co., 1891.

Surgical Anatomy for Students. By A. Marmaduke Shield, M.B. Cantab., F.R.C.S. New York: D. Appleton & Co., 1891.

The Prescribers' Pharmacopeia. Second Edition. Bombay: Kemp & Co., Limited.

The Treatment of Appendicitis. By J. B. Summers, Jr., M.D. Reprint, 1891.

Tobacco, Insanity, and Nervousness. By Dr. L. Bremer (Druggist). Pamphlet. St. Louis, Mo.: Meyers Bros.

Record-book for Physicians and Trained Nurses. Philadelphia: P. Blakiston, Son & Co., 1891.

Gymnastic Exercise as a Prophylactic and Curative Remedy in Chest Diseases. By Edward O. Otis, M.D. Reprint, 1891.

Puerperal Eclampsia. By J. T. Graham, M.D. Reprint, 1891.

Guaiacol in the Treatment of Tuberculosis. By Prof. Max Schueller, of Berlin, Germany. Reprint, 1892.

Manual of Operative Surgery. By Frederick Treves, F.R.C.S. Two volumes, with 422 Illustrations. Philadelphia: Lea Bros. & Co., 1892.

First Lines in Midwifery. By G. Ernest Herman, M.B. Lond., F.R.C.P. Illustrated. Philadelphia: Lea Bros. & Co., 1892.

Surgical Diseases of the Ovaries and Fallopian Tubes, Including Tubal Pregnancy. By J. Bland Sutton, F.R.C.S. With 119 Engravings and 5 Colored Plates. Philadelphia: Lea Bros. & Co., 1892.

Dictionary of Treatment, Including Medical and Surgical Therapeutics. By William Whitla, M.D. Revised and Adapted to the Pharmacopeia of the United States. Philadelphia: Lea Bros. & Co., 1892.

Notes on General *versus* Local Treatment of Catarrhal Inflammations of the Upper Air-tract. By Beverley Robinson, M.D. Reprint, 1891.

A Case of Orbital Cellulitis and Primary Mastoiditis Interna, etc. By Charles Zimmerman, M.D. Reprint, 1892.

Poliomyelitis with Perineuritis. By J. T. Eskridge, M.D. Reprint, 1891.

Tumor of the Brain. By J. T. Eskridge, M.D. Reprint, 1892.

The Treatment of Typhoid Fever. By James Barr, M.D. Introduction by W. T. Gairdner, M.D., LL.D. London: H. K. Lewis, 1892.

Lessons in the Diagnosis and Treatment of Eye Diseases. By Casey A. Wood, M.D. Physicians' Leisure Library Series. Philadelphia: George S. Davis, 1891.

External Perineal Urethrotomy. By W. B. Rogers, M.D. Reprint, 1891.

Poverty Superseded: A New Political Economy. A Paper on Economic Science. By A. P. Reid, M.D.

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ORIGINAL ARTICLES.

OBSCURE FORMS OF GOUT.[1]

BY CHARLES W. DULLES, M.D.,
PHYSICIAN TO THE RUSH HOSPITAL, PHILADELPHIA.

SOME years ago a friend of mine, a physician, while travelling in Europe, was the subject of an obscure sense of ailing. He was not absolutely ill, he thought, but was not quite well, and had a feeling of depression for which he could not account. Being in London, he made up his mind to consult Sir William Jenner. After a visit, at which Sir William subjected him to a careful physical examination, he was surprised upon being told that his trouble was gout. His surprise finding some expression in his countenance, Sir William said to him: "You do not believe me, but you will find I am right. You Americans know little about gout, because you do not see much of it, and what you see you do not recognize." Within a few days my friend awoke one morning with a most obvious attack of gout in one of his feet; and his respect for gout and for Jenner's diagnostic ability was considerably increased.

This story is so closely in the line of some recent observations of my own that I have chosen it to introduce a brief presentation of them and the reflections to which they have given rise in my mind.

Gout is a disease that, in the last few centuries, has been studied with great thoroughness by the English, the French, and the Germans, and it is probable that the earlier American physicians, following the teachings of older and contemporary English writers, and dealing with patients of habits very similar to those of their English ancestors, were alert to detect its presence. But I have the impression that Sir William Jenner did not exaggerate much when he expressed so strongly the idea that in our day gout is not taken into account by American physicians as it ought to be, while an indication as to the degree of attention it has received from the American authors of medical works may be found in the fact that the Index Catalogue of the Surgeon-General's Library at Washington contains nearly twelve columns of titles of books on gout, and among them I find only three books—and these not imposing—by American writers.

[1] Read before the College of Physicians, March 2, 1892.

Within the past few months three cases of gout—among others—have come under my care, which strikingly illustrate the importance of recognizing forms of gout that depart from the picture usually regarded as typical. These cases have been so instructive to me that I think it may be of service to describe them.

The first of the cases was that of a gentleman of means, but actively engaged in a business that required much thought and involved serious responsibilities. He is about fifty-five years old, of full habit, and "a good liver," but free from all forms of intemperance. Near the end of last winter his son brought him to my office in a condition that is hard to describe, but one that each of us has probably often seen. The man did not present any marked signs of disease, but he was pitiably unnerved and broken down. His appetite was poor, his sleep disturbed, his bowels somewhat irregular. He seemed so much to need mental rest that I suggested that he go away to Florida. I wished to examine his urine, but he slipped away to a health resort in North Carolina before I had an opportunity to do so. He came back in a few days feeling much better, and I did not hear from him for some time. Several months later, I was asked to see him by his regular family physician, and found that after a short spell of feeling out of sorts, he had fallen one day on the staircase of his house in what was called a "faint." On inquiry I found that in the "faint" the patient had continuously opened and closed one hand. In other words his attack was not one of syncope, but a convulsion. His regular attendant and I agreed that we must study his urine, and on doing so I found in it a large number of crystals of uric acid. As he was at that time about to go with his family to Europe, I warned him in regard to the dangers of the gouty diathesis, and advised him how to avoid them as far as possible. A few weeks later he wrote me from Paris: "You are a good prophet; I have just had a pronounced attack of gout in the foot." Since then he has returned to his home, and had several more attacks of equally typical character.

The second case was that of a lady living in the quiet of an admirable family. Nearly two years ago, she had an attack of "grip" when the epidemic was most severe in this country. After that she was never quite as well as she had been before. About six months ago she began to suffer with pains of a neuralgic character, which were especially severe in the thighs and in the lower part of the back, and which appeared also in the chest-wall and elsewhere. Some of these closely resembled the pains of sciatica. She was not under my care; but once or twice in the

absence of her regular physician, I was called to see her; once when I gave her a subcutaneous injection of one-quarter of a grain of morphine, I was much impressed with the fact that this dose of morphine quieted her and kept her asleep or sleepy for fully thirty-six hours. Some time after this, while away from home, she suddenly developed symptoms of advanced disease of the kidneys, and was brought home, with waxy complexion, edema of the face and legs, oppressed breathing and a general appearance of the phenomena of contracted kidneys, and died in twenty-four hours. This patient's knuckles were knobbed, and I have no doubt, from a long acquaintance with her, from observations made on occasional visits, and from the manner of her death—for ten hours preceding which I had her under almost constant observation—that she died of contracted kidney due to gout.

A third case of gout that did not present the most conspicuous manifestations of the disease was that of a physician, about forty-five years old, a man of means and not in practice. Last June he sent for me, and when I came, he said: "I am afraid to see you; because I think that I have an aneurism of the aorta, and I fear you will confirm my opinion." He then described symptoms, some of which are found in cases of aneurism of the aorta, and submitted to a thorough physical examination. I found no evidence of aneurism whatever, and told him so, when he naturally asked me how I accounted for his symptoms. In preparing an answer to this query, I inquired pretty fully into his history and examined his urine. The former gave distinct points consistent with a theory of gout, and the urine showed an abundance of crystals of uric acid and oxalate of lime, some kidney epithelium, and no casts, albumin, or sugar.

I then told my friend that I believed his symptoms were due to gout, and advised a regimen in accordance with that theory, and the use of a natural mineral water which I have found advantageous in similar cases. In a few days he felt better; in a few weeks he felt well; and to-day he is apparently in perfect health. A year ago he was unable to enjoy anything; to-day he is full of spirit and enjoys everything. A year ago he could not walk a hundred yards on a slight ascent, without dyspnea and precordial distress; now he walks miles with ease and pleasure.

It would be a work of supererogation for me to dwell upon the symptoms and course of frank gout, for these are familiar to every practitioner of experience, especially in our older cities. In throwing off the British yoke the American colonists secured no independence from the diseases of their British progenitors; and the tendencies that our forefathers inherited, though they may have been kept in abeyance while the nation was passing through the arduous and heroic epochs of its early history, seem to be finding more pronounced expression, now that the number of persons living in comparative ease or actual luxury is increasing. As it was in Greece and Rome, so it has been in England and on the continent of Europe, and so it is likely to be in America. Abernethy's advice to "live on a shilling a day, and earn it," indicates a road to health that is constantly being deserted by Americans, and as a result, the diseases of over-feeding and inadequate muscular exercise must become more conspicuous among us. For this reason gout is likely to secure more and more victims in this country, and consequently it is well that American practitioners should be prepared to recognize not only its striking forms, but also those that are irregular or obscure.

In his classical work on *Gout and Rheumatic Gout*, Garrod says that, while gout in its most marked and typical manifestations is exceedingly prevalent in England, "in its lurking and undeveloped forms it is probably still more so, and exercises a considerable influence over the character and progress of other disorders." From this, it is a natural step for him to emphasize the importance of properly distinguishing gout from other diseases, of recognizing it when it is present, and at the same time avoiding the error of attributing to gout what are really manifestations of other disorders. Everyone who becomes especially interested in a particular disease is in some danger of falling into such an error, and the more likely to do so as the idea of anomalous forms of that disease takes possession of his mind.

In determining the diagnosis of gout we must study the history of the case—the hereditary tendency of the patient, the existence of predisposing or exciting causes, and the symptoms. In retrocedent gout—that is, the development of visceral disorders or lesions upon the disappearance of gout from the joints—the case is simple, although Garrod aptly quotes a remark by Watson that "so-called *gout* in the stomach has sometimes turned out to be *pork* in the stomach." There is undoubtedly a form of dyspepsia in persons predisposed by heredity to gout that may justly be attributed to this disease; and this form of dyspepsia is sometimes relieved upon the appearance of gout in a joint, while treatment suitable to gout proves curative of it.

Gout of the heart is often associated with gouty dyspepsia; but Garrod speaks of cases in which palpitation, and irregularity of rhythm have been produced by the state of the blood. Dyce Duckworth, in his elaborate work on *Gout*, emphasizes the importance of what may be called minor symptoms of disturbed action of the heart, such as giddiness and dimness of vision, in gout. A case of my own has impressed me with a similar conviction. I am myself inclined to believe that certain forms of angina pectoris are dependent upon the gouty dyscrasia. I have seen three cases in which long-continued disturbance of the functional action of the heart

seemed to me to be altogether dependent upon gout, to which the patients were liable by heredity or by their habits, and of which they presented other manifestations. This is a subject that I think deserves very careful investigation, so that we may ascertain just how far we may look to the gouty habit to account for heart symptoms that are not otherwise easy of explanation.

The effect of gout in producing cough, dyspnea, and even asthma, is recognized by almost all authors, but there is danger, I think, of attributing such disorders unjustly to gout, with which they may be merely coincident. At the same time it is proper to recognize that, if not directly induced by gout, the conditions named may be exaggerated or made less amenable to ordinary methods of treatment by reason of the gouty dyscrasia. Examples of this tendency have certainly occurred in my practice.

The kidneys are probably the organs that are most likely to undergo serious alterations in consequence of unsuspected gout, and a recognition of this fact is of the utmost importance. Draper, in his admirable article on gout in Pepper's *System of Medicine*, speaks forcibly of the insidious character of gouty nephritis, and states that gout of the kidney is the most common cause of death in this disease. The observations of other writers on gout are in accord with this statement, and it can hardly be dwelt upon too strongly in studying the possibilities of gout. In one of the cases briefly described I believe that a careful study of the history of the patient, and a due consideration of the possibilities of gout, would have prevented a very erroneous prognosis on the part of one physician who treated her, and perhaps have led to a more appropriate line of treatment.

In this particular case a consultant of large experience was quoted to me as treating with apparent unconcern the state of the kidneys, because the quantity of albumin found in the urine was small!

Such a statement suggests either an error in the account of what was said, or a serious misapprehension of the significance of the presence of small quantities of albumin in the urine. On the other hand, it is possible that large quantities of albumin may be found in the urine during comparatively slight attacks of gout. Very recently I had under my care a young lady who was suffering with an attack of podagra, very well defined but of moderate severity, whose urine contained enough albumin to make, with underlying nitric acid, a coagulum one-third of an inch thick. This patient presented no other symptom of kidney disease—her urine was repeatedly and thoroughly examined—and she made a good recovery from her attack of gout.

Temporary glycosuria is another evidence of faulty nutrition or disordered excretion which is found in some cases of gout. Dyce Duckworth points out the danger of mistaking this phenomenon for diabetes mellitus, and especially of communicating this erroneous belief to the patient or his friends.

The influence of gout upon the skin has been especially emphasized by certain French observers. Draper cites Bazin (*Affections génériques de la Peau*, Paris, 1862) as describing functional derangements of the skin dependent upon gout, such as excessive perspiration, seborrhea, alopecia, pruritus, urticaria, and erythema. Eczema is a well-recognized manifestation of the gouty diathesis, and Draper calls attention to the frequency of acne in persons predisposed by heredity to gout. Garrod, in 1881, stated that he regarded eczema as the special skin-lesion of gouty subjects. I have noticed a peculiar fetid, or rather a sour perspiration in a few persons belonging to gouty families, some of whom in time developed frank attacks of gout. As connected with the skin, it is interesting to note that Dyce Duckworth speaks of spontaneous loosening and falling out of the teeth as a manifestation of gout.

One of the most important manifestations of obscure gout is neuralgia. There is hardly a writer on gout who fails to call attention to this feature of the disease, and yet I believe it is by no means properly appreciated. The neuralgia of gout may affect any region that an ordinary neuralgia may invade, and may easily be misinterpreted. This is especially true of the sciatic region; so that what is only a manifestation of gout may be called sciatica. One feature of such cases that may be noted is the fact that the neuralgia of gout appears in various places at the same or at different times. The ham, the calves of the legs, the loin, the side of the chest, the arm, and the area of distribution of the fifth pair of nerves, may be the seat of severe and even agonizing pain; and this very shifting of location ought to warn the physician to carefully consider the possibility that gout is the cause of the phenomena.

Other manifestations of gout in the nervous system are vertigo, loss of consciousness, and even epileptiform convulsions. These are rarely of a very pronounced character, but Garrod mentions one case under his observation, and one of the cases I have described presented this group of symptoms. The relation of gout to this and other forms of cerebral disturbance is not yet clearly defined, and it would probably be useful for men of large experience to study their cases with especial reference to this relation. In my practice I have observed that in some subjects gout has a peculiarly depressing influence, so that they are easily disheartened, and lack vigor of will. Laycock has called attention to the influence of gout in producing hysteria, and many

authors connect it with hypochondriasis. Dyce Duckworth has been so impressed with the nervous features of gout that he defends the hypothesis that gout is a neurosis. He also speaks of the occurrence in gout of violent pains in the muscles—as, for example, cramps in the legs.

These remarks do not by any means cover all the manifestations of gout that may be misunderstood, but which, if duly considered, may lead to its diagnosis when what are universally recognized as its typical symptoms are absent; but it is hoped that they may serve to attract attention to, and perhaps also throw a little light on, a subject that is of some consequence in our study and treatment of disease.

As already stated, I have the impression that in this country gout often escapes diagnosis, and that it would be better for our patients if we were on the alert to detect its less familiar features. We do not want to deceive ourselves by a too ready disposition to find gout where it is not actually present; but, to keep in mind that gout may be the cause of a great variety of symptoms, and to know what some of these symptoms are, may at times make our diagnosis much more satisfactory and our treatment much more successful than they otherwise would be.

DIPHTHERIA TREATED BY THE EARLY LOCAL USE OF GERMICIDES.[1]

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Diphtheria is admitted to be a disease caused by a microscopic germ or bacillus commonly known as the Löffler bacillus, or more often called the Klebs-Löffler bacillus. The only point now in dispute is as to whether other poisonous microörganisms (saprophytes), as well as the Löffler bacillus, have the power to cause diphtheria.

The course and termination of a case of true diphtheria in man, is typically characteristic of the invasion of a living organism by a poisonous germ. There is first the period of incubation, sometimes marvellously short, in some cases extending over a period of a few days, or even hours; this is, of course, the period when the bacillus is germinating and preparing to do its deadly work. Then generally follow the initial chill and fever—temperature ranging from 100° to 103½°, but without the defervescence that follows the chill of malarial fever. Coincidently with or immediately following the chill, will generally be found, on some part of the tonsils, uvula, or pharynx, the characteristic yellowish or grayish-white exudation that has so often struck terror to our hearts. Then follows the steadily advancing growth of the false membrane, extending backward and downward upon the walls of the posterior part of the pharynx, even to the larynx and trachea, or upward and backward to the posterior nares. As the exudation increases, there arises the enlargement of the submaxillary glands, and septic fever produced by the absorption of the poisonous ptomaïnes generated by the bacilli and absorbed into the blood. If unchecked, these symptoms continue until death speedily comes, either from strangulation, or what is much more frequently the case, from true septic fever, closely analogous or identical with that produced by the absorption into the system of the putrid material found in dissection wounds, hospital gangrene, or pyemia.

The plan of treatment I propose is not the application of new and untried remedies. On the contrary, it is simply the application of our old and well-known methods of treatment, in consonance with the laws that hinder the growth and destroy the bacterial germs that are the cause of diphtheria.

What germicide, then, or agent having power to destroy bacterial life, can we most readily use? Corrosive sublimate is the one almost universally used, and is the one that I have employed. I use it in spray and in a stronger solution than usually employed, viz.: one grain, with five grains of tartaric acid, in a little over a fluidounce of distilled water, 1 : 500; this is liberally sprayed at least once an hour for the first twenty-four or forty-eight hours. When the exudation disappears, I dilute the bichloride solution to 1 : 1000 or even 1 : 2000. After I am called to a case of diphtheria, alternately with this I apply every hour to the fauces and tonsils, with a camel's-hair throat-brush, a solution of twenty grains of chloral hydrate in a fluidounce of glycerin. These applications are to be made continuously for a period of from twenty-four to forty-eight hours, according to the gravity of the case, until the exudation begins to soften and peel off; the applications are not then made so frequently. The use of this is twofold; in the first place the continued use of the glycerin, aided by the powerful antiseptic action of the chloral hydrate, softens the false membrane and leaves a clean surface on which the bichloride of mercury can act. At the same time I direct either that water be kept boiling in the room, to saturate the air with moisture, or that lime be slaked in the room.

As to medical treatment, I give in solution from two to four grains of quinine every three hours, until from sixteen to thirty-two grains have been given, the dose being proportioned according to age. Then I commence and give the tincture of the chloride of iron in large doses every three hours alternately with the quinine. This treatment, continued

[1] Read before Medical Society, Washington, D. C., December 2, 1891.

for from forty-eight to seventy-two hours, has in my hands met with almost universal success.

The objection may be made to this treatment, that it is very laborious to the person who is nursing the child, and this is true.

When called, I say frankly to the parents that, in my opinion, the life of the child will depend upon sacrificing every other consideration, and for two or three days upon continuous and exclusive devotion to the care of the child.

About two years ago, I attended a child six years of age, attacked with diphtheria in its most malignant form. Day after day I watched the false membrane encroaching more and more upon the back part of the throat and soft palate. Then came enormous swellings of the submaxillary and parotid glands, which turned a livid purplish color. With this a condition of true septic fever developed, from the absorption of the poisonous ptomaïnes generated by the bacilli. All treatment seemed unavailing, and when I left the house after the child's death, I felt so completely disheartened with the failure of my attempt to save the child's life that I felt almost like abandoning the practice of medicine forever. Studying over this case and many others of like character that I had met with during the past years of my practice, I began to feel certain that my want of success was due to a lack of energy during the early stages of the disease, and that a more active treatment directed to stamping out the disease when it was just beginning its ravages would be the proper course to pursue.

These are the principles that have guided me in the treatment of the cases that form the basis of this paper. The number of cases was only fifteen, yet the result has been so uniformly good (as they have all recovered) that I now go to a case of diphtheria with a confidence of a successful result that I had never felt before.

I need not go into the detail of the histories of the cases, but will only give such points as may be interesting. The first five cases occurred in one family over a year ago, and after a prolonged struggle they all recovered. The next two cases occurred in October of this year in one family; one child of nine years brought the disease from the country, where she had been staying during the summer. She came home on Saturday and I did not see her until the following Tuesday. Her attack was quite severe, involving the fauces and posterior nares. She had infected her sister before I saw her. Case No. 8, in another family, was interesting from the fact of a relapse occurring on the ninth day from imprudent exposure. The diphtheritic exudation returned on the fauces, after having completely disappeared for several days; in this case I applied a strong solution of nitrate of silver to the patch of diphtheritic exudation membrane, with excellent results. Case No. 9 was a girl, aged thirteen years, with quite extensive patches of membrane covering fauces, uvula, and tonsils. The temperature was 102° on the first day, and falling in three days to 100½° (in morning), with a gradual abatement of all the symptoms. Case No. 10 was a girl, aged fifteen years. There was complete recovery in three weeks. Cases No. 11, 12, 13, 14 and 15 all occurred in one family. The two boys were first attacked, one fifteen years of age and the other five; then the two girls, aged ten and twelve years, respectively. Then the mother was attacked; and finally the infant child, eight months old, took the disease. In the case of the infant, after the exudation had disappeared from the throat, the disease assumed the form of a bronchial catarrh, and the case seemed well-nigh hopeless. The energetic use of stimulants, hot mustard-poultices, and the internal administration of carbonate of ammonium and spirits of turpentine in large doses saved the child's life.

As to other local remedies, I have used solution peroxide of hydrogen largely. It is an admirable deodorizer and disinfectant, but I have not found it as good a local application in diphtheria as the bichloride solution. Listerine, diluted with from one to four parts of water, is also an excellent application, used as a spray or gargle, when the bichloride seems to irritate, and for a time may require to be stopped. In none of my cases has the bichloride solution caused any symptoms of mercurial poisoning. Should symptoms arise, of course its use should be temporarily stopped, continuing, however, the swabbing of the throat with the chloral and glycerin solution, and substituting the diluted solution of peroxide of hydrogen (one part to four parts of water), used with an atomizer, in place of the bichloride of mercury solution.

As regards prophylaxis or prevention of diphtheria, granting that diphtheria is due to a poisonous germ it would seem to be proper to use weak germicides in the case of all persons who have been exposed to the contagion of the disease, even though they may not by any external symptoms show that they are infected. I would earnestly recommend, therefore, that the bichloride of mercury solution 1 : 2000 or even 1 : 4000, be used either as a spray or gargle five or six times a day by all persons residing in the house in which a patient is sick with diphtheria.

If the attending physician objects to this, let him use in the same way the diluted solution of peroxide of hydrogen or the solution of chloral hydrate in glycerin, twenty grains to the ounce of glycerin—this is to be diluted with three parts of water when used as a spray; or Listerine, diluted with from one to four parts of water, may be employed.

A careful and thorough examination of the throats

and mouths of the members of the family residing in the house in which a case of diphtheria exists should be occasionally made by the attending physician, in order that the disease may be detected in its early and curable condition.

After a somewhat lengthy experience of the effects of alcohol, I must most earnestly protest against the use of alcoholic liquids, especially when given in large doses. Alcoholic liquids are most valuable and indispensable remedies, but they should be given in small doses and repeated at regular and stated intervals. I rarely give more than one or two teaspoonfuls of good whiskey or brandy, well diluted and sweetened, every three, four, or six hours, according to the age and condition of the child. Alcohol, when given in liberal doses, it should be remembered, is not a stimulant, but on the contrary is a powerful narcotic and depressant. The action of alcohol upon the heart is like the use of a spur to a jaded horse, and its continued use in too large quantities will increase instead of diminishing the irregularity and feebleness of the circulation. I have seen cases of heart-failure and death after diphtheria which I feel convinced were hastened in their progress, if not entirely caused, by the injudicious use of alcoholic stimulants in too large and frequently repeated doses.

During the convalescence from diphtheria, small doses of whiskey or brandy should be given three times a day, after meals, to obviate the tendency to heart-failure that is apt to occur, and that sometimes happens even after convalescence has been thoroughly established. It is, of course, to be understood that during the treatment of the cases referred to in this paper care was given to keep up the strength of the patients by the liberal use of liquid and easily digested food.

FRACTURE OF THE BASE OF THE SKULL.[1]

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IT has been a generally accepted belief that a fracture at the base of the skull is almost necessarily fatal. Still, there is quite a number of cases on record in which the diagnosis of fracture of the base was made and the patient recovered. Wagner even ventured to state that when a patient with fracture at the base survives without untoward symptoms, it is pretty sure that he will recover. He cites twenty-three cases, all of which recovered—that is to say, that did not die within forty-eight hours after the accident. This has induced many surgeons to doubt the correctness of diagnosis in many of these cases. But there has been a sufficient number of autopsies of such cases made to antagonize and refute the doubt. As shown by a large number of cases, the most frequent seat of fracture of the base is in the middle fossa, and the majority were in a transverse direction through the pyramidal petrous portion of the temporal bone. These fractures also have a tendency to branch forward along the side of either cavernous sinus into the sphenoidal fissure. This will explain certain symptoms of paralysis, as that of the third nerve, thus producing dilatation of the pupil and strabismus. Those fractures of the base are produced by a transmission of the impulse from the vertex or lateral portion of the calvarium. There is still another form of fracture, called fracture by *contre-coup*, the existence of which is doubted by some of the best authorities. These may be considered fractures by direct violence, in so far as the force is brought to bear directly on the point of impact, as when a man falls upon his feet in a rigid manner, and the base of the skull is broken through the foramen magnum, while the atlas may be dislocated into the cranial cavity; or, when falling on the face, the petrous portion is fractured, while perhaps one or the other head of the lower jaw is driven through the articular process, just as the head of a hammer may be driven into the handle by striking the handle against some solid object. These are the severest forms of fracture, and, of necessity, fatal. The fractures by blows from above, arteriorly, posteriorly or from either side, are as a rule mere fissures, and not comminuted fractures.

The immediate danger from a fracture at the base is that of injury to the brain-substance proper, its coverings, the bloodvessels, both cerebral and meningeal. The carotid artery is rarely, if ever, injured. If the injury to cerebral substance is slight, and no large bloodvessels are injured, the symptoms of concussion will rapidly disappear, and there will not be marked symptoms of compression, as the hemorrhage that would produce these is not sufficient to interfere with the functions of the brain.

After recovering from the immediate effects of the injury, the question of secondary inflammatory processes arises, provided there has been a dissolution of continuity in the vault of the pharynx, the roof of the nasal fossa, or the auditory meatus and tympanic cavity. However, with ordinary antiseptic precautions these dangers are reduced to a minimum. The patient, however, may succumb to an osteomyelitis, suppurative meningitis, abscess of the brain, or thrombosis. The healing of the bone takes place by the least possible amount of callus cementing the fissure.

The diagnosis of a fracture of the base is made from certain symptoms due to the communication of the fracture with one or more of the fossæ of the

[1] Read before the Milwaukee Medical Society, November 10, 1891.

skull. One or more of these symptoms will be present in all of the cases. If the fracture extends into the posterior or occipital fossa there will be ecchymosis into the mastoid region and in the neck; if in the anterior or middle fossa there will, as a rule, be ecchymosis of the orbits. These ecchymoses come on in a few days after the injury has taken place, and are quite diagnostic. These symptoms may be absent, however.

Hemorrhage may take place from the nose, the ears, and the mouth, and if blood has been swallowed there may be vomiting of blood, more or less modified by the gastric juice. The flow of blood from the ears does not necessarily indicate a fracture of the petrous portion, since a simple rupture of the tympanic membrane may give rise to a flow of blood from the external meatus. If, however, the flow continues for some time, one may be pretty sure that there is a fissure of the bone. Another symptom sometimes shows itself, and is of grave significance—the flowing of a limpid fluid from the external meatus, usually on one side. It is at first mixed with blood, but later assumes a straw-color appearance. It is generally agreed upon that this fluid is derived from the subarachnoid space, and is the cerebro-spinal or subarachnoid fluid. It sometimes appears in large quantities. Many of the cases in which this symptom appears are fatal, though a large number of them also do recover. If they recover, the flow ceases in six or seven days. This symptom may be present without any rupture of the tympanic membrane, as also may the flow of pure blood.

Besides injury to the brain-substance itself, certain nerves are very often partly or completely torn, or there may be neuritis with effusion, resulting in compression of the nerves, with paralysis of the muscles supplied. Those most commonly injured are the facial and acoustic, which are directly in the line of the most frequent seat of fracture, the third nerve or motor oculi, and the sixth or abducens—in fact, any nerve or group of nerves may be implicated.

I have already said that fractures at the base are not as fatal as was formerly supposed, though some doubt the correctness of diagnosis in those cases that recover rapidly. It is a fact that though they do recover, there are defects, sometimes imbecility and other cerebral symptoms, as epilepsy, etc., or defects of innervation, which may be permanent. Very often, however, the nerves recover their functions almost or quite completely. As to treatment, there is only one indication that can be fulfilled, and that is antisepsis. Of course, absolute rest is necessary. If there has been bleeding from the nose this cavity must be frequently syringed with a non-irritating antiseptic solution. Both ears and nose may be syringed with a concentrated boric-acid solution, and boric-acid powder should be blown into the auditory canals. Mild diet, and perhaps an ice-bag to the head, are advisable; also, if constipation exists, a saline purge.

I present herewith an illustrative case:

F. B., a laborer, aged thirty-three, on the 20th of June, 1891, while assisting in lowering by means of a rope an iron column, weighing about 1000 pounds, was struck above the right ear by a swinging column and thrown on his head against a four-by-four beam. He became unconscious, and, as he said when he regained consciousness after about twenty minutes, he did not know what had happened to him, having in the meanwhile been transferred to the Emergency Hospital, a distance of four blocks from the place of accident. The external evidences of injury were a scalp wound, about three inches in length, about two and a half inches above the right external auditory meatus, extending antero-posteriorly, and exposing the periosteum. The left ear was severely bruised. There was bleeding from both ears, from the nose and mouth. He also vomited blood after regaining complete consciousness. There was immediately noticed a paralysis of both sides of the face, even of the fauces. There was bilateral lagophthalmus and a convergent squint of the left eye, the pupil of which eye was also larger than that of the right, and sluggish in action.

The temporal wound was sewed up with catgut sutures, and dressed antiseptically. The nose and ears were washed with a boric-acid solution, and iodoform was blown into the ears. The man was then taken home. I called on him on the morning of June 21st. The hemorrhage still continued. He spat blood; blood came when he blew his nose slightly; and blood flowed from both ears. I again washed his nose and ears with a boric-acid solution, and blew the acid powder into his ears instead of the iodoform. He complained of severe headache and pain in the eyes, also of amblyopia of the left eye. I ordered an ice-bag to his head, and had the room darkened; I also had his nose syringed a number of times during the day. The headache continued for about five or six days, gradually diminishing until it disappeared, leaving, however, a sensation of dizziness that lasted several weeks. There was no elevation of temperature at any time. The pulse was at first somewhat retarded—60 per minute; after a few days it became from 72 to 76, and stayed there. There had been vomiting immediately after the accident, but only the single attack. The hemorrhage gradually diminished and ceased in about a week. After two weeks the syringing was discontinued, The temporal wound had completely healed by first intention, and the patient was able to sit up. The right side of the face was beginning to regain its mobility, and after three weeks the patient was able to close the right eye, and wrinkle the forehead on the right side. The left side showed no signs of improvement. I began treating it with mild currents of galvanic electricity for five minutes every other day, and although the muscles reacted well to the current, though sluggishly, there was no perceptible change after four weeks of treatment, so I discontinued it, not expecting to see that side

recover its functions. About the beginning of September the patient returned to me with an abrasion of the left cornea and an iritis, for which I sent him to Dr. Bach. I was surprised to find that he had regained considerable of the motility of the left side, and that the strabismus was disappearing. He then complained of a salty taste in the mouth, and this sensation still continues. On testing, the sense of taste is diminished most markedly on the left side, as are also the sensations of touch and pain in the tongue. The function of the seventh nerve is now almost completely, if not completely, restored; the strabismus and concomitant diplopia are gone. The man, however, complains of a weakness of vision, also of a certain deafness and ringing in the head.

Dr. Bach recently made an examination of the eyes and ears, and found the tympanic membranes intact, though there are several spots of calcareous deposit, perhaps due to extravasations at the time of injury. Hearing $\frac{5}{6}$ on both sides.

There is a general congestion of the retina, and the bloodvessels are tortuous. I do not know whether this is of both eyes or of the left only. The vision of the left eye is $\frac{1}{3}$, and of the right eye $\frac{2}{3}$. The eyes are very irritable. The lids are in a catarrhal condition, the conjunctivæ bulbi congested.

The patient says he does not feel as well now as he did a few weeks ago. The dizziness and ringing in the ears trouble him, as does also the paresthesia of the tongue.

CAUSES OF THE DIMINISHED PREVALENCE OF TYPHOID FEVER IN DENVER.[1]

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WHEN a disease that for several years has been widely prevalent, causing many deaths, becomes much less frequent, we naturally are led to employ some of the leisure thus afforded in investigating the causes of the change, with a view to throwing some light on the conditions favorable to the development of the specific germ of such a disease. That typhoid is less prevalent in Denver this year than in previous years is the universal testimony of the profession and is clearly shown by the records of the Arapahoe County Hospital. In 1888, up to August 15th, 62 cases were admitted. In 1889, up to the same date, 66 were admitted. In 1890, 69 were admitted, while in 1891 only 35 were admitted. The same conclusion is reached by investigating the mortality reports of the Board of Health.

To ascertain the cause of this condition, it is necessary to note the particulars in which this season has differed from others, and then we shall be in a better position to estimate the influence of each of these variations upon the development of the specific bacillus.

The average temperature during the summer of 1891 was much lower than usual, the mean temperature during June, July, and August being only 63.4°, 68.9°, and 69.7° respectively, against 67.6°, 74.8°, and 69°, for 1890, and 62.4°, 72°, and 72.8° for 1889; the total deficiency in temperature from January 1 to August 3, 1891, being 699°.

The most noticeable peculiarity of this season was the unusual rainfall, the precipitation during the year up to and including August having been vastly beyond the average, the total excess in precipitation for the eight months from January 1st to August 31st amounting to 6.58 inches, or about 50 per cent.

Both coolness and moisture doubtless retarded the development of the germs: the former, as warmth is favorable to their growth; the latter, as the abundant rains washed away much of the accumulations of filth of all sorts that furnishes the most favorable soil for their development. Moisture probably has a further effect by raising the height of the ground-water, which this year has been much nearer the surface than usual, as is shown by the general testimony of people having wells that the water in them is much deeper than usual, and also from the fact that in north and west Denver the cellars have, in many cases, been partially filled with water.

Pettenkoffer believed that the distance of the ground-water from the surface was the most important factor in the causation of typhoid, as shown by some observations made by himself and Buhl at Munich, and repeatedly since then has it been observed that when the ground-water was far from the surface, typhoid was prevalent, and *vice versa*. No thoroughly satisfactory explanation of this fact has yet been brought forward. Baker, secretary of the Michigan State Board of Health, supposes that the contents of privy-vaults, as they soak through the soil, spread laterally as they descend, the soil so saturated forming a cone, with its apex at the surface; thus the deeper the ground-water the larger the base of this cone and the greater the number of wells that it would reach and contaminate. Whether or not this supposition can satisfactorily account for the diminished prevalence of the typhoid is doubtful. A rise of from two to six feet in the level of the ground-water would not contract the base of the cone of saturated soil to an equal extent, but even if it did, the influence of such a limited contraction could not be great, even in localities where the drinking-water is obtained from wells, as comparatively few wells would be included within this space, while it utterly fails in cases in which the water-supply is rived from streams or lakes at a distance.

The cause of present greater healthfulness, how-

[1] Read before the Arapahoe County Medical Society.

ever, must not be sought alone in these climatic peculiarities. The Department of Public Health has been much more active and efficient than heretofore, securing a more prompt removal of garbage, emptying and disinfection of cesspools, putting in thousands of sewer connections, and condemning a large number of wells. The value of these various factors can only be guessed at, but must have been considerable. This is indicated by the fact that the unsewered district, containing about two-fifths of the population, furnished during July seventy-nine deaths from all causes, while in the sewered districts, containing three-fifths of the population, there were only sixty-four deaths from all causes. During August the unsewered two-fifths furnished seventy-nine fatal cases from all causes, while the sewered three-fifths only furnished fifty-seven. I was unable to ascertain what part of these deaths was due to typhoid, but probably the proportion of deaths from typhoid to deaths from all causes was larger in the unsewered than in the sewered districts.

Also considered by wards, we find that the third, seventh, eighth, and ninth wards, which contain most of the unsewered parts of the city, furnished in July eighty-eight and in August one hundred and eleven cases, while the remaining five wards, which are sewered, furnished in July only fifty-five and in August only forty-five cases. In these districts, also, much of the water is obtained from wells, the water of which has been analyzed in many cases, and almost invariably found unfit for use.

Another possible cause may be found in the changed water-supply. Until 1891 the water was supplied by the Denver Water Company, being obtained from underground reservoirs below the bed of the Platte River, the water filtering through the sandy bottom into them. These reservoirs are situated just above the city and below the villages of Fort Logan and Littleton, the sewers of which empty into the river and contaminate the water, as the germs so introduced must be but imperfectly, if at all, removed by the filtration through a few feet of sand. This summer most of the principal streets have had the mains of the new Citizens' Water Company as well as those of the old company, and many of the houses have changed their water connections to the mains of the new company, the water of which is brought from the mountains in underground pipes, removed from any opportunity of contamination in transit. What influence, if any, this change has had upon the prevalence of typhoid, can only be conjectured. To prove anything, it would be necessary to ascertain what relation the number of cases of typhoid in houses supplied by the new company bears to the total number of houses supplied by the company, and also what relation the number of cases in houses supplied by the old company bears to the total number of houses supplied by this company; when, by comparing these ratios it could be seen whether or not the new water-supply had diminished the prevalence of typhoid. This, however, is impracticable.

Great as is the credit due our present Health Department, I think that only a part of the improvement in the public health is due to the improved sanitary condition brought about by them, as we find a similar improvement in the surrounding cities and villages, which, of course, share with us the unusual climatic conditions, while their sanitary condition is unchanged. If our next summer shall be hot and dry, while the sanitary condition continues to improve, we shall be in much better position to estimate the value of each of these factors than we now are.

LEPROSY.

BY A. LAURENT, ESQ.,
OF NEW YORK.

AN article published in a leading paper some time ago concerning leprosy in Jamaica, West Indies, created quite a sensation in New York, as if the fact were a new discovery; but it must be remembered that lepers may be found in Norway, in Ireland, in Central and South America, in the Antilles, in Oceanica, in Africa, and in Asia. In Europe nowadays the disease is absolutely under control, while elsewhere, beyond any doubt, it is spreading. Absolute segregation is generally considered as the best remedy, but governments experience great difficulties in enforcing the law. These difficulties are of various kinds. In extensive countries it is practically impossible to reach all the lepers. Then the question, Who is a leper? is sometimes very difficult to solve. The disease may not develop before eight, ten, fifteen, or twenty years—in case of women, often not before marriage—and the very limited knowledge concerning the disease professed by many physicians makes any step dangerous to take. Segregation also has many adversaries who, on the ground of humanitarian feelings, and looking only at one side of the question, advocate the right of man to individual liberty. Finally, and this is perhaps the point most important of all, leprosy attacks not only the poor, but many wealthy men and families suffer; and through influences manifesting themselves in various ways the latter manage to prevent any law or bill from passing, or, if enacted, to avoid its effects. That is the reason why all of the work done by several commissions appointed in England during the past fifteen years has proved sterile. Segregation, again, must be strict, general, and absolute; otherwise it is useless. In all of the reports

made on the subject, the spread of leprosy is intimately connected with vaccination with humanized virus, and this seems to explain how in Europe, where, outside of better hygienic conditions, every possible care is taken by physicians in vaccinating, the disease is disappearing, while just the reverse is taking place in other parts of the world. The following authors have furnished very important documents in support of that theory: Dr. Gairdner, of Glasgow (*Brit. Med. Journ.*, June 11, 1887), on vaccinal leprosy. Dr. F. C. Castor, of British Guiana, in his report for 1887, says that under certain conditions leprosy may be contagious, and that it is undoubtedly transmitted by heredity. Dr. John D. Hillis, in charge of the Leper Asylum of Mahaica, British Guiana, in 1889 wrote several pages to show how leprosy is being spread by inoculation (*Journ. Royal Agricultural and Commercial Society*, Demerara). Dr. Boon, of St. Kitts (*Quart. Reports* for 1889), and Governor Robinson, of Trinidad, point out the same fact. Dr. Edw. Arning, of Honolulu, in a letter to Mr. Tebb, is yet more outspoken, and says that there is no mistake about the actual synchronism of the spread of vaccine and of leprosy on the Hawaiian Islands. In another article he writes that, unquestionably, new centers of leprosy developed after vaccination was practised—leprosy, like syphilis, depending for its propagation upon the direct introduction of the virus into the blood. In 1880, Dr. Livening, of Sandwich Islands, pointing to the fact that for thirty years the disease had spread among natives of certain islands where it was previously unknown, says: "It is probable that in a certain stage of the disease it is inoculable." In a letter dated Bergen, Norway, April 9, 1889, Dr. W. G. Armour Hansen, Inspector of Leper Hospitals in Norway, says: "I moreover think that leprosy in most cases is transferred by inoculation. Whether there be any danger of transferring the disease by vaccination I cannot say, as in my country one never is vaccinated from a leprous child, at least so far as we know." Father Damien (*The Lancet*, 1889) attributed his infection with leprosy to inoculation. Dr. Robert Pringle, of the Bengal Army, speaking of the way in which vaccination is practised in the East Indies, says that leprous inoculation will become far more possible, and hence probable, than it may appear at present, unless prompt and stringent measures are taken in Bombay (Letter to *The Times*, June 12, 1889). Sir William Moore, surgeon-general of the Bombay staff (Lecture delivered at King's College, November 20, 1889); Dr. Herdemstam, chief medical officer for Cyprus (Letter to Parliament, March, 1890); Mr. Racker, of Barbadoes (*Agricultural Reporter*, January, 1889); Dr. J. Bechtinger, of Rio de Janeiro (book on the subject published in Vienna); Dr. Robert Francis Black, M.R.C.S., L.R.C.P., Edinburgh; Mr. Michael MacTurck, British commissioner and resident magistrate, British Guiana; Dr. R. B. Emerson, president of the Board of Health of Honolulu, and many others, express the same opinion and give illustrative instances.

Now, knowing one and very likely the most important of all of the causes to which is attributed the spreading of the disease, why are governments so neglectful? They are well aware of the fact that lymph is never secured in sufficient quantities, and that in remote countries, outside of the physicians, many persons are practising vaccination, making use of any kind of lymph. They may do it *bona fide*, for it sometimes requires a well-educated eye to discover leprosy, above all in a child; but it would be better anyhow, under those circumstances, to prohibit any such practice. That is where the apathy of governments becomes criminal.

Venezuela is the only country where segregation is really and effectively compulsory. The law was passed during the presidency of General Guzman Blanco, and in 1880 the Providence Island Hospital was established. There, no matter who one is or what his wealth, if he be recognized to be a leper he is compelled to go to the asylum. Providence Island, about one mile long and one-third of a mile broad, is situated in the narrow part of the Lake of Maracaibo, some four miles from the town of Maracaibo, in the State of Zulia. One is not admitted to the island without a permit from the State government. Anyone that can afford it is authorized to build a little cottage on a given piece of ground. The hospital is a large rectangular building, with a large yard in the center and an inside veranda between the yard and the rooms. Everything is plain and simple, but exceedingly clean. Each room has two doors, an inside window, and its own supply of water; the walls are whitewashed; a hammock, chairs or stools, and a wooden trunk used as a press for clothes are the only pieces of furniture. About 140 lepers live on the island. The average of expenses per head per year has been brought down from $100 in 1886 to about $85 at present. The State of Zulia contributes 6000 bolivares ($1200) for the maintenance of the institution. Voluntary contributions and gifts help in making improvements now and then. A chapel forms one side of the building, and a library is open to all the patients. The institution is managed in Maracaibo by a committee or junta, consisting of seven members. On the island lepers are taken care of by a physician, a chaplain, a manager, four policemen, two cooks, two boatmen, and four or five assistants.

During a sojourn of two years in Maracaibo I often went to the island, where I always found these unfortunate creatures as happy as they can be.

They are well treated, safe from ill-usage, and admit that life is made as easy for them as it can be, considering their miserable condition.

ORIGINAL LECTURES.

NON-VENEREAL SYPHILIS.

A Clinical Lecture, delivered to the Students of the Georgetown Medical College, at the Central Dispensary and Emergency Hospital, of Washington, D. C., on November 14, 1891.

BY HENRY A. ROBBINS, M.D.

LAST week we had the difficulties in the diagnosis of syphilis under consideration. The more you see of syphilis the more you will agree with that Scotch divine who, commenting on the text "David said in his haste, all men are liars," said: "Ah, David! if you had lived at the present time, you would have said that at your leisure."

Years ago it was supposed that syphilis was exclusively a venereal disease, and that the poison was always transmitted by carnal contact. It is well known at the present time, however, that syphilis occurs very frequently from inoculation during operations, from innocent exposure of the lips to the poison by kissing, and other methods equally consistent with the good character of the person affected.

Some years ago, Dr. Bulkley, of New York, read a paper before the New York Academy of Medicine, in which he drew the following conclusions:

"Syphilis is not necessarily a venereal disease, but in a considerable proportion of cases is acquired quite unconsciously, and in an entirely unexpected manner. Failure to obtain a venereal history should not lead to the conclusion that certain lesions are not those of syphilis. The syphilitic virus can be carried a long distance, and after some time cause syphilis in the inoculated. Non-venereal chancres have been mistaken for epitheliomata, and operations for their removal have even been performed. Non-venereal syphilis often shows great malignancy."

A week ago I gave at length a report of the case of a little girl, seven years old, who acquired syphilis in a singular way. After accidentally injuring her hand, suffering an incised wound, her uncle put his mouth to the part, thinking that suction would more rapidly induce healing. A chancre, followed by enlarged glands of the axilla and roseola, ensued. Examination of the uncle revealed mucous patches in his mouth.

I alluded to another case occurring in a Jewish family in which, after the rabbi had performed the religious rite of circumcision on a child, a chancre developed, and subsequently mucous patches were discovered in the mouth of the rabbi.

Dr. M. Rollet, in a chapter of his excellent work on syphilis, mentions the frequent transmission of this disease among workers in glass, who, in blowing bottles, make use of an iron tube, called a *canné*, which passes from mouth to mouth; in consequence of this practice, infections take place, commencing in the mouth.

Dr. M. Hillariet mentions the case of a patient, a lady whose morality was above suspicion, who acquired a chancre of the lower lip, followed by terrible constitutional syphilis. She had drunk from a glass that had been previously used by a woman who was affected by a chancre of the lip. Dr. Hillariet also mentions the case of a favorite medical student who acquired a labial chancre by placing between his lips a pen that had been soiled by his own fingers, previously in contact with ulcerations.

It is a well-known fact that in Cuba the most expensive cigars carry chancre-poison, having been licked with the lips by the roller to make the ends secure. Perhaps this fact may solve the question of the origin of *epithelioma* when the diagnosis and prognosis of certain cases have been so vague and unsatisfactory. I quote the following taken from the *Times:* "A prominent physician told me lately, that from the practice of cigar-makers wetting the wrapper with saliva and biting the end of the cigar into shape, a spread of syphilitic disease was taking place; that he knew of several cases. Somewhat alarmed, I managed to visit a number of factories. Two-thirds of the cigarmakers, I found, daub the whole end of the cigar with their saliva. Thinking that Cuban workmen might not do it, I visited places where they were employed, finding that not only did they use their saliva to make the wrappers stick, but that most of them, before wrapping, bit the end of the cigar into shape with their teeth."

At a clinic held in Paris, at the Hospital St. Louis, Dr. Fournier presented a man who had an indurated chancre of the tonsil, followed by engorgement of the cervical glands and secondary eruptions on the skin. The primary chancre was evidently induced by a simple cauterization with a stick of nitrate of silver which had previously been used on a chancre. In a similar manner Dr. M. Blauchet, who had a large practice in Paris, communicated syphilis to twenty-seven persons in passing a catheter into the Eustachian tube; among others, a young girl of high connections, a pupil of Sacre-Cœur, was infected, and, together with other symptoms, suffered from necrosis of bones of the nose, but recovered good health subsequently. Blauchet had the habit of simply placing the catheter in a tumbler of water after each catheterization, without otherwise cleansing it.

The *University Medical Gazette* says that "the initial lesion of syphilis has been reported a number of times in the literature of medicine as occurring on the eyelids, most frequently upon the free border of the under lid, and at both commissures. The source of infection has usually been due to kissing, a mucous patch in the mouth being the source of the contagion. Chancres have not alone been found in the eyes of adults, but are occasionally found in children. Thus, in an analysis of twenty-one cases of syphilitic lesions of the eyelids made by Griffith (*Medical Chronicle*, 1886), five children of thirteen months or under were affected: in four of them the manifestation was primary, and in one the appearance exactly simulated that of a Hunterian chancre, although the reporter was not able to definitely prove this point. A number of instances of chancres appearing among children in France some years ago led Baudry to investigate the source of infection. This was found in the not infrequent custom among the attendants of these children of attempting to cure inflamed

eyelids by moistening them with saliva. Mucous patches were present in the mouths of these attendants, and the palpebral borders were thus inoculated with syphilitic poison. It is a fact not generally known, perhaps, that among certain ignorant and filthy classes the habit of endeavoring to remove foreign bodies from the eye by means of the tip of the tongue is not an uncommon practice."

Dr. Motz (*Gazette des Hôpitaux*, 128) reports the case of a soldier having an indurated chancre of the eyelid. Under specific treatment recovery took place in nine weeks. A kiss was supposed to have been the cause.

Dr. Lee (*Liverpool Medical and Surgical Journal*, January, 1886) reports the following: "A man had a chancre on the left upper eyelid, accompanied by considerable swelling and induration of the pre-auricular and submaxillary glands on the same side. The patient was strong and healthy, married, aged about thirty-five, a laborer in the Mersey tunnel, and stated that six weeks previously he had gotten some grit in his left eye, which a fellow-workman undertook to remove by licking with his tongue. About a month after this occurrence the eyelid commenced to swell; there had been no discharge from it, and shortly he noticed that a lump began to form on the side of his cheek; he used only domestic remedies, and the eyelid not improving in about a fortnight, he sought advice at the infirmary. Specific treatment resulted in cure.

I have, in my medical scrap-book, notes of several cases of syphilis communicated through the medium of a razor during the process of shaving. I have also found a case of acquired syphilis from the bite of a man. Dr. MacLaren, in his splendid *Atlas of Venereal Diseases*, has a beautiful representation of a digital chancre caused by striking in the mouth a man who was a victim of syphilis, and had buccal mucous patches.

Before bovine virus came into general use, syphilitic virus was undoubtedly communicated through the agency of humanized virus. The literature on this subject is voluminous. Chancres probably resulting from the lascivious kisses of an infected prostitute can be found almost anywhere on the integumentary surface.

The following case is unique: Dr. Leloir (*Annales de Dermatologie et Syphilis*, 1882, Nos. 9 and 10) relates the case of a medical student in whom the initial manifestation of syphilis was situated between the second and third toes of the right foot. The patient was suffering from eczematous fissures between the toes, and acknowledged contact of the affected part with the lips of a woman who was afterward found to be suffering from mucous patches of the mouth.

The following I quote from the *Gazette des Hôpitaux*, December, 1859: Dr. Guényot and M. Gailleton were prosecuted at Lyons for inoculating a child, not affected with syphilis, with secondary syphilitic pus. The inoculation was successful; secondary syphilitic symptoms appeared within two months. They were fined for the experiment, one in the sum of 100 francs, the other in the sum of 50 francs.

Otis says that mediate contagion of syphilis is common. "It may be through the medium of a spoon, a pencil, a cane, a cigar, a kiss, or dental instruments. The accoucheur may acquire it through his finger. Nine cases of syphilis of the finger I published several years since as occurring under my own observation, and I have seen other cases since that time. Besides this, I have seen at least double that number of cases of syphilis where no possible trace of source of contagion could be ascertained. A tumbler, or any article in common use, defiled with the secretions of a mouth harboring a mucous patch, coming in contact with a crack or abrasion of the lips of a healthy person, may communicate syphilis through a resulting lesion, which may pass away unnoticed. Any similar contact with the blood of a person in the active stage of syphilis will communicate it."

Years ago, there was a question whether the blood of syphilitics was contagious or not. To solve this question, Dr. Bargioni, an Italian physician, voluntarily submitted to the experiment. The patient who afforded the material for experiment was a woman, aged twenty-five years, the subject of well-marked constitutional syphilis. Her arm was washed clean, and no eruption existed on that part. The cephalic vein was opened, and some blood was drawn; lint was dipped in it, and applied to the arm of Dr. Bargioni, in which three incisions had been made, just below the insertion of the deltoid. In twenty-four hours the lint was removed. In four days all trace of the inoculation was gone. After a few days he noticed itching, and on looking at the arm there was observed a round papule, of a red color, but no induration around it. The papule gradually increased, and in eight days was of some size, and covered with a slimy scale. Eleven days after its first appearance the glands in the axilla became enlarged. On the sixteenth day these glands were larger; and on removing the scab from the papule a small quantity of serum was found beneath, but no induration around it. On the eighteenth day, there was an ulcerated surface with a crust on it, and a certain degree of hardness at its borders. On the twenty-third day it was larger and harder, as were also the glands. A month after the first appearance of the papule he had nocturnal pains in the head, and observed some enlargement of the cervical glands. A week after this a roseolous rash appeared on the body, and spread all over him, leaving no doubt as to its nature. In another week the sore was not yet disposed to heal, and the glands were larger. The rash then became copper-colored. Mercury was given, and the sore began to heal.

I will now proceed to report some cases in which, as physicians and surgeons, we are more especially interested.

Dr. Wilks, of Guy's Hospital, reports the case of a surgeon who accidentally cut his finger while operating on a man suffering from secondary symptoms, and who himself in consequence took the disease. This surgeon gave it as his opinion that women continue to infect men long after the primary sore has healed.

Diday speaks of the frightful ravages of syphilis in a country village, introduced by a syphilitic infant and propagated by the nurse.

Chancre of the breast is one of the most important of extra-genital chancres. Although it may be contracted by contact with the mouth, or even the genitals of another adult, it is by far the most frequently met with as the result of contagion from mucous patches on the lips of nursing infants.

When attending the clinics at the Allgemeine Krank-

enhaus in Vienna during the years 1877, 1878, and 1879, I attended several "semesters" of Professor Zeissel, one of the greatest syphilographers of the age. This pre-eminent man, we all know, had acquired syphilis while opening a bubo. During the year 1884 he died of cerebral syphilis.

It would be impossible for pen to portray the dangers and horrors of syphilitic infection more graphically than Professor Wm. Goodell has done in a clinical lecture to his students at the University of Pennsylvania. Dr. Goodell says:

"When I was a medical student, one of the members of my class, just before his final examination, broke out, from head to foot, with an unmistakable syphilitic eruption. He was at a loss to account for it, yet his diploma was at first withheld from him, on the ground of immoral conduct. Fortunately he remembered having had a sluggish ulcer on his finger, which, very luckily, he had shown to a member of the faculty, who, however, made light of it. This fact, together with the fact that he had worked during the summer vacation in the venereal wards of a hospital, exonerated him. His diploma was given to him, but he was too much disfigured to go on the stage to receive it. Now mark the history of this man! After taking much medicine, and supposing himself cured, he settled in a Western city, and married. To his great dismay, the first pregnancies successively ended in early miscarriages. Then he put himself and his wife upon a long course of specific treatment. The pregnancy that followed this went nearly to term, and husband and wife were very happy. But the curse was yet upon him. She was prematurely delivered of a syphilitic and dead child. Terribly disappointed and disheartened, the doctor fled from his wife's bedside to an upper room of the house, and shot himself dead.

"I often met in consultation a physician of fine physique, and in splendid health. Unfortunately he delivered a woman whose husband had infected her. That physician is now a wreck, dragging one foot behind him as he hobbles on crutches. It was the old story: first a sluggish and unsuspected sore upon the hand, and next the characteristic eruption, which, like a thunderbolt, revealed the nature of the disease to the unfortunate victim. Then a gummy tumor formed in the brain, followed by aphasia and paresis. Potassium iodide in heroic doses saved his life, but that was about all it did.

"I know two other physicians who caught this horrible disease while in the discharge of their professional duties. One of them lost every hair on his body, from the crown of his head to the sole of his foot. For years he struggled and strove with the poison. But he finally conquered it, and lived to marry, and to have a family of healthy children around him. The other physician had the usual innocent-looking sore on his finger. It hung on obstinately, and for weeks he had his finger in a stall, yet I could not get him to believe that it was specific. Before long he was confined to his house with some obscure chest-trouble, which greatly perplexed his physicians. I could not stand it any longer, and going uninvited to his bedroom I made a strong 'deliverance' of my opinion of his disease. But he laughed me to scorn. A few days later, a magnificent crop of rupia appeared upon his forehead. Then all was clear; and under appropriate treatment he recovered his health and has continued well ever since, but he was ill for a long time.

"The knowledge of these facts has made me keenly alive to the dangers which physicians in general, gynecologists especially, incur in the examination and in the delivery of women. It has also made me very careful to see that all my everyday instruments are kept scrupulously clean, for there is no doubt that careless physicians have unwittingly inoculated their patients by their instruments, and especially by the speculum. Why physicians who contract this disease in the legitimate exercise of their duties should, as a rule, suffer more than those who pay penalty for their immorality, I can explain only in one way. In the former the sore is ectopic, and not being in the usual site, is not recognized early enough to be controlled by local and constitutional treatment. In the immoral, the chancre usually appears on the genital organs, where it is anxiously looked for, and where its identity is unmistakable."

PSORIASIS—ACNE ROSACEA—EPITHELIOMA—TINEA FAVOSA—SYCOSIS—HYPERIDROSIS.

A Clinical Lecture.

By LOUIS A. DUHRING, M.D.,
PROFESSOR OF SKIN DISEASES AT THE UNIVERSITY HOSPITAL.

Case I. *Psoriasis.*—This man, thirty-five years of age, has been affected twenty years, but never seriously, until after an attack of influenza one year ago. His body and scalp show numerous disseminated, scaly, slightly inflamed, erythematous, ill-defined patches, with considerable thickened skin. There are several patches, about the size of a dollar, on the back, and two or three palm-sized patches on his chest, tending to run together. The latter are yellowish, and more inflamed than the others, as a result of the application of chrysarobin ointment. The discoloration and inflammation caused by chrysarobin constitute the great objection to its use, since both skin and clothing are stained, besides setting up an artificial inflammation, unless cautiously and skilfully used. It is a most valuable remedy in this and other skin diseases, and these disadvantages may, in part, be overcome by care; use it sparingly, and not too strong at first, from 5 to 15 grains to the ounce, cautioning the patient as to its properties and dangers. With these precautions, it forms the best local treatment at our command. In this patient, on whom it was used in the proportion of 20 grains to the ounce, the scales have disappeared, and he is already much improved, though the skin is slightly discolored. Small blackish points are observed on his body, due to the staining effect upon the contents of the sebaceous glands. To allay the inflammation the following formula will be ordered:

℞.—Acid. boric. . . . . ℈ij.
Zinci sulph. . . . . gr. ij.
Alcoholis . . . . . f℥j.
Aquæ . . . . q. s. ad f℥iv.—M.
S.—Apply three or four times daily.

After subsidence of the inflammation, we will return to the use of chrysarobin. When psoriasis is localized, external treatment alone should, in most cases, be used;

though, in some cases, constitutional treatment will prove advantageous. Relapses are the rule, but patients sometimes escape. Seborrhea of the scalp differs from this disease, in that it is generally more diffused, and does not present the infiltration of the skin that occurs in psoriasis.

CASE II. *Psoriasis.*—This woman is also suffering from psoriasis. On one leg we notice small, red, circumscribed, and slightly scaly spots, while on the other leg there is a large, indurated, fissured, and inflamed lesion, showing no signs of the characteristic scales, and which, but for the existence of the lesions on the other leg, might be diagnosticated eczema. The disease has existed for two months, and has had no treatment. Remedies of different strengths are required for the two legs. For the small lesion an ointment of chrysarobin, 15 grains to the ounce, will be ordered; while for the larger, as it is fissured and inflamed, the following ointment will, for the present, be ordered:

℞.—Acid. salicylici . . . gr. xij.
Zinci oxidi . . . . ℥jss.
Petrolati . . . . . ℥j.—M.

CASE III. *Acne rosacea.*—This woman, aged thirty-five years, who is large and stout, has been under treatment for several months, and is much improved. Some cases of this kind are easily relieved, while others are extremely obstinate. It is a compound disease made up of acne plus dilatation of the capillaries, or rosacea.

There exists a disturbance not only of the secretion of the glands, but also of the circulation around the glands.

Treatment, in ordinary cases, is much the same as in acne. The following has been used:

℞.—Ung. sulphur. . . . . ℥j.
Resorcin. . . . . ℥ss.
Acid. salicylici . . . gr. xx.—M.

It does not irritate, but improvement is now not so marked as formerly, hence we will continue the foregoing at night, and order the following lotion to be used in the morning:

℞.—Sulphur. precip. . . . ℥j.
Etheris . . . . . f℥vj.
Aq. Cologn. . . . . f℥iv.
Alcoholis . . . q. s. ad f℥iv.—M.

S.—To be shaken and applied for fifteen minutes each morning.

This treatment will be continued for several days. The lotion is a valuable formula, in some cases proving of more benefit than any other remedy. The method of combining remedies, by using dissimilar ones night and morning, is frequently found to be of distinct advantage. Then, too, much may be accomplished by properly directing a patient, and particularly in acne is this true. Patients should be made familiar with the method of using a remedy, whether to be applied with or without friction, the length of time to rub in an application, etc. Frequently, when this is neglected, we find patients not carrying out the treatment properly, thus at times explaining the failure of good remedies. If the case be a marked one, the patient should be seen often, and the progress of the disease watched under treatment.

CASE IV. *Disseminated glandular epitheliomatous degeneration on the neck.*—The patient, an elderly man, states that these lesions have been forming for fifteen or twenty years. The disease is a superficial, epithelial degeneration, disseminated, breaking down in places, forming small ulcers. It is the mildest manifestation of epithelioma, and may continue in this way for years, or it may break down into larger and more active lesions, if allowed to pursue its natural course. Much may be done for this mild expression of the disease. An ointment of sulphur, at first 30 grains to the ounce, and later stronger, will be ordered, to be rubbed in twice daily. Sulphur soap may be used in place of ordinary soap. Resorcin is also useful in these cases. This tre atment tends to arrest the abnormal epithelial proliferation.

CASE V. *Epithelioma of the nose.*—This woman, sixty-five years of age, had a dime-sized ulcer on the side of her nose, which was curetted four weeks ago. The wound has since been healing. She has been using a dressing of resorcin cerate, 30 grains to the ounce, which was found to be too stimulating and was discontinued. Resin cerate was then ordered, and has proved beneficial. Granulation should not be allowed to cease too soon, or the resulting scar will not be full and shapely. The wound is now discharging freely, and we will endeavor to keep up granulation by using a wash of resorcin, 20 grains to the ounce.

CASE VI. *Tinea favosa of the scalp.*—This boy, an Italian, ten years of age, has a contagious, parasitic disease of the scalp, characterized by small, cup-shaped, pale-yellowish crusts, each perforated by a hair. The crusts in crease in size, forming irregular-shaped masses, which have a peculiar, characteristic, mouse-like odor. The hairs become much diseased, dry, and brittle, or the follicles suppurate, and the hairs fall out, leaving scars. The disease is only occasionally met with in this country. It usually occurs among the poorest class, and chiefly in foreigners.

Treatment is difficult when the disease is extensive. It pursues a decidedly chronic course, lasting for years or for a life-time. This boy has been using the following as a soap:

℞.—Sulphur. . . . . ℥ij.
Acid. salicylici . . . gr. xxv.
Soft-soap . . . . ℥j.—M.

Besides this, he is applying a wash of sulphurous acid, and the officinal sulphur ointment, under which treatment he is somewhat improved. The disadvantage of treating this disease lies in the fact that it is found in this class of people; it is extremely difficult to have a line of treatment thoroughly carried out. An ointment of betanaphthol, 3j to the ounce, is useful, and in this case will be prescribed at an early day.

CASE VII. *Sycosis.*—The lesion, on this man, has existed for four months, and consists of papules and papulopustules, each perforated by a hair, together with marked thickening and inflammation, involving the bearded region of the face. This disease is met with in all grades of society. The lesions appear close together, and tend to set up an area of follicular inflammation, accompanied usually with burning. In tinea sycosis the hairs are soon involved, becoming dry, brittle, and loose,

falling out spontaneously, or they may be readily extracted. Tinea sycosis, moreover, usually pursues a more rapid course. Sometimes it is difficult to distinguish between the affections without the aid of the microscope. The disease is obstinate, and must be properly treated. This man has a subacute type, which calls for stimulating remedies, such as the following:

℞.—Zinci sulphatis } āā . . grs. x.
Potass. sulphidi }
Aquæ . . . . . f℥iv.—M.

S.—Apply to face three or four times a day, for a few days.

After which use sulphur ointment (℥ij to the ounce), rubbed in with friction. The face should be shaved every other day. Ichthyol and resorcin, in form of lotion or ointment, may be used locally with advantage. Constitutional treatment, as a rule, is of little value. Some cases require stronger and more penetrating remedies, as salicylic acid with sulphur ointment. Never aggravate the disease by remedies, and as soon as increased inflammation sets in, stop the remedy. If the treatment being used does not show improvement in three or four days, it is advisable to make a change.

Case VIII. *Hyperidrosis of the soles.*—The plantar surfaces of this young man's foot have been affected for six or eight years. It is a functional disease of the sweat glands, and is usually chronic. Bromidrosis, or stinking sweat, is at times present, and may be so marked that the patient cannot occupy the same room with other persons. Astringent lotions and dusting powders are indicated. The patient has, for the past week, been dusting with boric acid, after washing the feet several times each day and thoroughly drying, and returns to-day greatly improved.

CLINICAL MEMORANDA.

A CASE OF IMPERFORATE ANUS; SUCCESSFUL OPERATION THROUGH PERINEUM.

By ALFRED E. BRADLEY,
FIRST LIEUTENANT AND ASSISTANT SURGEON, U. S. A.

Baby F., a female, was born July 22, 1891, at midnight. On the following day it was noticed that the infant had no anus. The child was sent to the writer through the kindness of Dr. F. A. Halliday, Acting Assistant Surgeon U. S. A., whose case it was. No tumor or fluctuation could be found; abdominal pressure caused no bulging, and in no way could the presence of the bowel be determined. The perineum was smooth, the raphe extended from the vulva to the coccyx; not even a dimple marked the anal site. The genital organs were apparently perfectly developed; urination was normal; the infant was fairly well developed, but was irritable, and evidently in distress; the abdomen was distended, and the superficial veins passing to the anterior thorax were prominent and tortuous. The child had taken the breast, but was loth to do so for some twenty-four hours prior to the operation; vomiting had taken place several times, but consisted only of the milk taken. Its weight was not more than six pounds, and it was not particularly well nourished.

An operation through the perineum was decided upon, and was agreed to by the parents. If the perineal route had failed, preparations had been made to do an inguinal colotomy.

The child was placed in the lithotomy position, and, with the assistance of Dr. Halliday, the operation was performed on the morning of July 25th, the child being then fifty-eight hours old. No anesthetic was given; the only pain the infant seemed to experience was while the incision was being carried through the skin. This incision was about seven-eighths of an inch in length, and made antero-posteriorly. Dissection in the line of the coccygeal and sacral curve was carefully and cautiously made with scalpel, grooved director, and probe-pointed scissors, the little finger being employed as a probe. After going in to the depth of about an inch, an exploring-needle was carefully used; after its introduction about an inch further the escape of gas showed that the bowel had been punctured, and that the operation could be carried on with probable success. Further dissection to a total depth of about two inches disclosed the rectal pouch distended at the bottom of the incision. It was grasped by forceps, a tenaculum introduced, and the bowel then opened by an incision about half an inch long. This was followed by a gush of meconium and some gas. The quantity voided seemed enormous, and the relief given the infant was immediately evidenced by a quiet sleep.

The incision and lower bowel having been cleansed by injecting warm water, the rectum was carefully drawn down by the tenaculum and sutures introduced. The first was passed through the margin of the perineal incision, through both lateral walls of the rectal pouch, and out through the margin of the incision on the other side. When the loop in the lumen of the rectum was drawn down and divided, the bowel could be easily manipulated by the two lateral sutures thus formed. As nearly as possible the edges of the incision into the rectum were brought into apposition with the incision through the skin, and the sutures tied. In, all seven sutures were thus introduced, and the rectum was then continuous with the perineal opening. This opening was much diminished in size by the slight upward traction of the bowel, but mostly by the action of the external sphincter, which threw the tissues about the incision into distinct corrugations. Throughout the operation the writer was impressed with the tremendous size of his hands and instruments as compared with the extremely small field of operation. The child stood the operation well; there was no evidence of shock or collapse; it went quietly to sleep, and after awakening it took the breast eagerly.

On July 30th, though there had been previously a slight diarrhea, there were but two passages, beginning to be normal in appearance. The stitches all pulled out from the bowel; there were no adhesions of the bowel to the skin. The wound looked healthy, and granulations were springing up. The bowel was adherent at a point about three-fourths of an inch above the perineal incision. The child suckled heartily, slept well, and its condition was in every way favorable. The wound was dusted with equal parts of iodoform and boric acid.

On August 2d the child was still doing well, suckling, sleeping, and thriving. There appeared to be some in-

continence, but there was still certain control over the sphincter. The parts were healthy. A rectal bougie of tallow, about two inches long, was introduced twice daily to overcome the tendency to cicatricial narrowing.

On September 20th the child was growing and thriving, with two or more healthy passages each day. Cicatricial hardening and contraction had taken place, so that it was difficult to introduce even the tip of the little finger. The resisting ring seemed firm and fibrous. Tallow bougies were used, but of too small diameter. A tight-fitting bougie caused considerable pain. Bougies five-eighths of an inch in diameter at the base were slowly introduced and allowed to remain about five minutes. These were to be gradually increased in diameter until the desired result was obtained. If these should prove ineffectual, the ring of narrowing should be nicked by a scalpel, and gradual dilatation be maintained during and after the healing.

On December 18, 1891, when last seen, the child was doing remarkably well. It had been necessary to dilate the cicatrix on account of the extreme contraction; this was done under chloroform, the narrowed ring being nicked by a scalpel in several places, and this followed by forcible dilatation with the little finger. There had been considerable reaction, and for a few days it seemed that recovery would be impossible. Healing took place, however, and the perineal opening became much more patulous, and, though narrow, it seemed to be sufficient. The bougies were still employed, for the tendency to narrowing still existed. The child was large and healthy, but it was with difficulty kept free from constipation, and required constant watching. There seemed to be little or no incontinence.

FIBROID TUMOR OF THE UTERUS.

BY W. H. MILLER, M.D.,
OF LITTLE ROCK, ARK.

CALLED to see Mary M., a colored woman, forty-three years old, married and the mother of three children, I learned that she had not menstruated for ten months or a year, and that she was having excessive hemorrhage from the vagina. Upon examination, I found a tumor in the vagina, about the size of the normal uterus, tightly grasped between the lips of the cervix.

I introduced a speculum, and ascertained that the hemorrhage came from the tumor, which had all the appearances of a fibroid of the uterus. I succeeded in checking the hemorrhage with tampons moistened with hydrastis; these I allowed to remain in the vagina for twenty-four hours, when I removed them and found the hemorrhage but slight. Inversion of the uterus had been diagnosticated; repeated attempts had been made to replace the mass, but had proved unsuccessful. For purposes of confirmation or correction, I attempted to pass a sound into the uterus. The procedure was attended with difficulty, on account of the extensive base of the tumor; but, once finding an opening into the uterus, the sound was readily passed for nearly three inches. I was thus fully satisfied that the condition was not one of inversion of the uterus. The tumor was hard and non-painful, bleeding freely when punctured. The patient's family history was good; she said that about eight years previously she had been operated upon for a tumor in the same situation, and that the growth was not entirely removed. I, therefore, concluded that the mass must be a fibroid tumor of the uterus.

The tumor could not be moved from side to side, as is the case with pedunculated fibroids; hence I concluded that it must have a broad base; this opinion I afterward found to be correct, as the attachment of the tumor extended from just within the external os to the fundus of the uterus, and laterally about two fingers' breadth.

I prescribed fluid extract of ergot, f℥ij, *per rectum*, three times a day, to prevent a recurrence of the hemorrhage, and to facilitate expulsion of the tumor, which I determined to remove as soon as possible. I was compelled to delay operation for some time on account of the development of an acute phlebitis in the left lower extremity. The tumor seemed to diminish in size and become softer, and there was a slight discharge from the uterus. The patient had some fever, which was controlled by irrigation of the uterus with hot water and bichloride of mercury.

On June 13th, with the assistance of Drs. Lindsay and Dickinson, I operated on the patient in the Sims position; and with the Sims speculum in the vagina I attempted to pull the tumor down, but failed on account of extensive adhesions of the uterus. I then passed a shawl-pin through the tumor to prevent the wire of the écraseur from slipping. I attempted to pass the écraseur around the tumor, but failed on account of the large extent of attachment. Using the fingers of the left hand in the vagina as a guide and to prevent injury to the uterus, with a pair of curved scissors I cut into the capsule of the tumor at its attachment to the wall of the uterus and enucleated the growth. The hemorrhage was slight, and after removing, by means of the curette, such particles as remained, I packed the uterus with iodoform cotton, and placed the patient in bed. Recovery was prompt and satisfactory. The woman's general condition improved greatly; her stomach, which previously to the operation had been irritable, gave her no further trouble. Previously to the operation the patient was confined to bed; the repeated hemorrhages had rendered her anemic. She now goes about attending to her household duties, and says that she feels better than she has for years. The cavity of the uterus measures about three inches in length; the os is about normal. The woman menstruates regularly, the period lasting about two days; it is free from pain, and the flow is not excessive.

I am aware that there is nothing new or novel in the case that I have reported. Perhaps the treatment may be criticised by electricians, who may say that I should have tried electricity before resorting to an operation. I think that electricity may be beneficial in cases of intramural fibroids when the growths cannot be removed without at the same time removing more or less of the uterus, or otherwise injuring that organ; but in all cases in which the tumor is accessible I should resort to the more certain procedure of immediate enucleation.

It may be suggested that with a woman forty or forty-five years of age an operation was not indicated, but that the menopause should have been awaited; but the condition of the patient was such that delay would have

been dangerous. In the next place, fibroids tend to defer the menopause.

A large fibroid tumor occupying the vagina may readily be mistaken for an inversion of the uterus. If in a non-corpulent person there should be an inversion of the uterus, we usually find a cup-shaped depression in the space behind the pubes usually occupied by the normal uterus; while in case of fibroid tumor palpation will disclose the presence of a uterus rather larger than normal. By rotating the tumor, if it be pedunculated, we find that the uterus rotates but little or not at all. The diagnostic point is the introduction of the sound. If in a case of long standing we can pass the sound through the cervix and beyond the mass in the vagina for a distance of two or three inches, we can say, without fear of contradiction, that the case is one of fibroid tumor, and not of inverted uterus.

I remember a striking case in which a mulatto woman presented a large tumor completely filling the vagina. Upon being directed to stand up and to bear down, she succeeded in completely expelling the tumor, which was an inverted uterus of long standing, which extended about half-way to the knees.

PAPILLIFEROUS FIBRO-CYSTIC ADENOMA OF ABERRANT BREAST NODULE.

BY W. S. FORBES, M.D.,
PROFESSOR OF ANATOMY IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

THIS comparatively rare form of tumor was taken from a patient brought to me by Dr. Wm. Harris, of Hamburg, Pa.

Mrs. S., forty-eight years old, when married, at the age of twenty-eight years, weighed 128 pounds. She now weighs 385 pounds. She has a younger sister who weighs 300 pounds, and who has borne two children, now young women, of twenty-two and twenty-four years of age. Mrs. S. has never been pregnant; she has always menstruated with regularity, without trouble, and continues to do so.

When examined December 18, 1891, a tumor was found in the left upper quadrant of the left breast. Both breasts were huge and pendulous.

The patient had observed a lump in the left breast for ten years, but only in the last twelve months had it begun to enlarge. The tumor appeared to be a fibroma lodged in a mass of fat, having no bands binding it either to the pectoral wall or to the mammary gland. After extirpation there appeared at least three inches of fat between the tumor and the mammary gland, and about the same thickness of fat between the tumor and the middle of the lower border of the neighboring great pectoral muscle.

There was no difficulty in removing the tumor. The patient returned to her home in ten days perfectly well.

I asked Dr. Coplin, Demonstrator of Pathological Anatomy in the Jefferson Medical College, to examine the specimen. The following is his report:

The tumor is irregular in outline, the sides and borders covered by fat. Its weight is 109 grams (nearly 3¼ ounces), and it measures in its longest axis 8.5 cm. (3 inches), in width 6.5 cm. (2½ inches), in thickness 4.5 cm. (1¾ inches). Upon section it cuts hard and creaks slightly under the knife. The cut surface shows several small cysts, varying in diameter from 0.5 mm. to 2 mm. Their outline is regular; some are round, some ellipsoidal, and a few semilunar, with projecting masses extending into, and entirely filling, the cavity. Where any fluid is present it is clear and viscid, closely resembling egg-albumin. Sections made through different planes show these cysts to be restricted to an area slightly oblong, and about 3 cm. (1⅛ inches) in diameter. This mass constitutes the tumor proper, with outlying bands of fibrous tissue.

Microscopic examination shows these cysts to be lined by cylindrical-celled epithelium, the masses projecting into the cysts being dendritic in character, with, in some, the appearance of branching. The stroma is a hard, dense, fibrous tissue, with here and there well-marked, but poorly developed, acinous-gland nodules, varying from one to three acini, their walls lined by flattened and poorly developed epithelium. The vascular supply to the growth has been abundant, and into some of the cysts hemorrhage has taken place.

The tumor is a papilliferous fibro-cystadenoma, a comparatively infrequent tumor of the breast. Among my sections I have a slide of an identical tumor. The late Prof. S. W. Gross brought the slide from abroad. These are the only specimens of this form of fibro-adenoma that I have seen.

From the position of the tumor and its histology I infer that it is from an aberrant breast nodule. These are not so rare as we are often led to believe, and when present are extremely liable to the development of neoplasms, for the most part malignant in character. I have a photograph of a case of carcinoma of aberrant breast nodule from a case at the clinic of the Jefferson Medical College Hospital several years ago. When the tumor was removed I found that it had no histologic connection with the mammary gland proper, which had been removed as a precautionary measure. The nearest gland lobule to the growth was fully two inches from the neoplasm, sections of which not only demonstrated, as in this case, the presence of gland tissue, but also that the entire aberrant breast had not been invaded by the neoplasm.

I have examined three cases of outlying breast structure, and all, strange to say, on the left side.

CHRONIC OSTITIS AND ABSCESS OF THE TIBIA OF LONG STANDING.

BY G. FRANK LYDSTON, M.D.,
OF CHICAGO, ILL.

THE following case appears to me a most interesting one, as showing the prolonged duration of chronic inflammation of bone, and the liability to the intercurrent formation of abscess.

The patient, a gentleman forty years of age, suffered a fracture of the tibia when seven years of age. Whether the fracture was compound or not he does not know, but I infer from his history that it was. It was followed by severe inflammation and necrosis of a portion of the bone. Ever since this early accident, he from time to time has experienced more or less pain at the site of the fracture, which was near the junction of the lower with the middle third of the tibia, and slight

pressure has always been sufficient to make him wince. He states that ever since the accident the lower portion of the bone has been quite tender, and has troubled him a great deal during change of weather. About six years ago he began to have pain in the upper portion of the tibia, principally marked at the articular extremity; more or less swelling was perceptible, and has continued to the present time. There have been occasional exacerbations, with quite acute pain. There is no history of syphilis, or any infectious disease, save scarlet fever in his youth. During the exacerbations of pain and swelling the patient has been compelled to use crutches. Within the last few weeks the pain has been exceptionally severe, and the difficulty of locomotion more marked than at any previous time.

At present the entire tibia is swollen, its diameter being fully double the normal; the muscles of the limb are atrophied from disuse, and possibly the reflex effect of the osseous inflammation and consequent disturbance of nutrition; there is excessive tenderness over the tibia, particularly marked at its upper and inner aspect. In this situation a marked nodular swelling exists, indicating a subperiosteal bony deposit. Another spot of a similar character is discoverable near the site of the old fracture. Numerous cicatrices adherent to the bone are present over the anterior surface of the tibia at points from which the patient says dead bone has been removed, or has escaped spontaneously from time to time.

The diagnosis is chronic ostitis, with osteo-sclerosis of considerable extent, and a probable abscess (possibly a sequestrum) in the upper cancellous extremity of the bone.

A free incision was made in the entire length of the tibia. The periosteum was found greatly thickened throughout. Subperiosteal nodes were discovered at the site of the thickening described; these were perceptible before the operation. The periosteum was peeled back and the bone exposed, and found to be of the peculiar ivory-like consistency and appearance characteristic of osteo-sclerosis. After considerable gouging and chiselling through the hard, ivory-like structure, an abscess was exposed in the upper extremity of the bone, which contained about a tablespoonful of moderately thick pus and was lined with a thin layer of granulations, and was evidently of quite recent formation. This abscess was probably tuberculous. No examination for bacilli was made, however. It was probably the result of a secondary tuberculous infection. The cavity was thoroughly cleaned out, and the bone drilled with a small drill in various directions surrounding the cavity. A linear osteotomy was performed through the lower portion of the bone, and the subperiosteal nodes thoroughly chiselled away, with removal of enough of the ivory-like bone beneath them to insure repair. The cavity is filling up nicely, and the pain is completely relieved. The result, undoubtedly, will be restoration of the limb to its normal degree of usefulness.

DIAGNOSIS OF FRACTURE OF THE FEMUR.

By W. M. L. COPLIN, M.D.,
DEMONSTRATOR OF PATHOLOGY IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

IN injury of the femur I wish to propose a method for determining the presence of fracture, more particularly intra-capsular or extra-capsular, with suggestions for its use elsewhere.

This method presents the advantage of determining the preternatural mobility in the direction of the axis of the bone. Allis's method, or rather the relaxation of the femoral fascia to which he has called attention, is suggestive of mobility upward of the trochanter, but does not in the least measure the degree of displacement, and may indicate only the fracture of the trochanter. In the method of measurement that I propose, the anterior superior spine of the ilium is taken as the fixed point on the pelvis and the inner condyle of the femur as the most suitable point on the extremity. Three measurements are made, which may be designated as: 1. Measurement of repose; 2. Measurement of tension; 3. Measurement of compression. The measurement of repose is made by taking the distance between the two points already given while the limb is lying quiet and in its characteristic position. The measurement of tension is then taken by making firm and somewhat prolonged extension in the axis of the limb; after which the measurement of compression or counter-extension is made, in which any shortening may be encouraged by slightly favoring the upward displacement of the lower fragment. This method of measuring is applicable to any and all fractures of the femur, and will afford corroborative evidence of fracture, except in the following cases: 1. Impacted fractures of either end of the femur. No information could be obtained by measurement in impacted fractures, at least by different measurements, and the objection advanced, that attempts at this form of measurement must break up impactions, cannot be considered as of more bearing than any other effort to diagnosticate a fracture of the femur; for example, attempts to obtain crepitus must be equally dangerous, as would also any attempt to ascertain the presence or absence of rotation of the fragment. 2. Fracture of the greater trochanter. Measurement, as suggested, would be quite useless, but if the measurement be made from the crest of the ilium to the trochanteric fragment there will be no alteration in the measurement, no matter how violent the attempt at extension or compression, provided the fracture is complete and the periosteum not retaining the two fragments in apposition.

I can but briefly outline this method of determining longitudinal mobility, and in the femur the lessened arc of rotation could be measured by taking a point on the pubic bone and measuring from that to the trochanter in complete eversion, followed by measuring in complete inversion, the difference marking the two arcs of rotation on the respective bones. If material difference between the two bones is discernible, there would be reason to infer that the two radii must be different. A similar measurement could be made from behind, taking a suitable point on the sacrum and measuring posteriorly to the right and left. This method may be found extremely useful in many forms of fractures elsewhere than in the femur, and will suggest itself whenever it can be used.

Quatrefages, a distinguished French physician and naturalist, died recently, in the eighty-second year of his age.

MEDICAL PROGRESS.

Aneurism of the Heart, with Symptoms of Angina Pectoris.—Mackenzie and Williamson (*Medical Chronicle*, xv, 5, p. 302) report the case of a man aged fifty-eight, who, without the history of a frank attack of rheumatism, for three months presented symptoms of angina pectoris. On walking fast and during the paroxysms of pain there was increased secretion of saliva referred to the left side of the mouth. There was tenderness in the precordia and over the second dorsal vertebra. The sounds of the heart were faint, the first soft; but no murmur or other abnormality was detected. The patient suddenly expired while engaged in his ordinary pursuits. When the chest was opened, the pericardial sac was seen to be greatly distended. Incision disclosed the presence of a large quantity of clotted blood. On the posterior aspect of the left ventricle, about midway between the apex and the auriculo-ventricular groove, and about a quarter of an inch from the inter-ventricular groove, the wall of the heart was thinned in an oval area, at the lower part of which was a minute linear rupture. On the inner aspect of the ventricle, at a corresponding situation, was a pouch-like depression containing small, recent blood-clots. The floor of the aneurism was apparently constituted only of the endocardium and the visceral pericardium. The edges of the mitral leaflets were slightly thickened; the attached margins of the aortic valves were atheromatous. The sinuses of Valsalva, the coronary arteries, and the ascending aorta were also atheromatous. On microscopic examination the cardiac muscle appeared normal. It is believed that softening of a circumscribed area of the muscular structure of the heart resulted in consequence of the thrombotic obstruction of a branch of the coronary artery, with secondary aneurismal dilatation.

Pneumonotomy and Pneumonectomy.—In a paper read before the College of Physicians of Philadelphia, Willard (*University Medical Magazine*, iv, 5, 1892, p. 334) expressed the view that the entrance of air into the pleural cavity is a far more serious matter, as regards collapse of the lung and of the patient, when the pulmonary tissues are normal than when they are diseased. In dogs, incision and removal of portions of the lung were well borne; hemorrhage was free, but was arrested by packing. Adhesion of the parietal and visceral layers of the pleura was readily secured by means of sutures; the resulting pleurisy was slight. The practical conclusions to be drawn are that incision into tuberculous or gangrenous or suppurating pulmonary tissue can be safely undertaken. In case of gangrene and of abscess better results are to be expected than from other methods of treatment.

Tuberculosis of the Pericardium.—At a recent meeting of the Pathological Society of London, Rolleston (*Lancet*, No. 3558, p. 1042) presented the heart and pericardium of a child, nine months old, that had died with tuberculous meningitis. Lungs, spleen, mesenteric and bronchial glands contained caseous tubercles. The bronchial glands were adherent to the pericardium. The pericardial sac was enormously enlarged. Externally it was red and rough. When opened, about three ounces of clear, yellowish fluid escaped. The parietal layer of the pericardium was everywhere greatly thickened and rigid. There were no adhesions between the visceral and parietal layers. Microscopically, the thickened tissues were found to consist of newly formed fibrous tissue containing bloodvessels, tubercles, giant-cells, and tubercle-bacilli.

Removal of the Uterus in Puerperal Peritonitis.—Smith (*Amer. Journ. of Obstetrics*, 1892, xxv, 169) has recorded the case of a woman, thirty-five years old, delivered by a midwife. The placenta being retained, efforts at manual removal had been made. Symptoms arising that made doubtful a diagnosis between septicemia, appendicitis, and pyosalpingitis, abdominal section was performed, but nothing abnormal was found in connection with the peritoneum, oviducts, or vermiform appendix. It was decided, nevertheless, to remove the uterus. The operation was attended with no special complication, and the subsequent course of the case was uneventful. The removed organ was found to contain remnants of placental tissue in process of decomposition.

The Infectiousness of Carcinoma.—Schopf (*Wiener klin. Wochenschr.*, No. 45, 1891, p. 840) has recorded the case of a woman, fifty-two years old, in which, on account of carcinoma of the body of the uterus, vaginal extirpation was practised. The large size of the uterus necessitated the performance of episiotomy. At either cornu superficial gelatinous infiltration, and at the internal os a soft mass as large as a hazel-nut, were found. Three months after the operation neoplastic nodules were found in the lines of incision that had been made to facilitate the extraction of the uterus. The inference is that local infection took place as a result of contamination by cells or fluid, or both, in the course of the operation. The patient died somewhat later from a metastatic growth in the liver.

Double Optic Neuritis following Influenza.—Lee (*Liverpool Medico-Chirurgical Journal*, No. 22, p. 44) has reported the case of a blacksmith, sixty years old, in which three weeks after an attack of influenza failure of vision appeared, and progressed to blindness. There was nothing abnormal in the urine, and there were no evidences of disease of the nervous system. On ophthalmoscopic examination moderate optic neuritis was found on both sides, disproportionate to the degree of impairment of vision. Under treatment by means of mercuric chloride, potassium iodide, and strychnine, some improvement took place, though secondary atrophy resulted.

Chloroform as an Anesthetic.—As the result of an experience of forty years in the Rotunda Hospital, Dublin, with the anesthetic employment of chloroform, covering many thousands of cases, Atthill (*British Medical Journal*, No. 1620, p. 110) expresses the opinion that, with due care and attention, if the anesthetic be pure, if a proper inhaler be used, if the respiration and pulse be watched, and if a needful degree of anesthesia be steadily maintained, the use of chloroform is safe, certainly quite as safe as the use of ether, while its effects

are infinitely less disagreeable to the patient, both during and subsequently to inhalation.

The Union of Severed Fingers.—At a meeting of the Berlin Medical Society, GLUCK (*Deutsche medicin. Wochenschr.*, No. 46, 1891, p. 1273) presented a butcher who had accidentally severed the terminal phalanges of the ring and middle fingers of the left hand by means of a cleaver. As soon as seen, the resulting wound was disinfected and the parts were carefully sutured. Union took place and was perfect a year and a half later.

THERAPEUTIC NOTES.

Carbolic Acid in Influenza.—SIMSON (*British Medical Journal*, No. 1621, p. 171) reports the successful treatment of many hundreds of cases of influenza by means of carbolic acid. The following is a useful combination:

℞.—Acid. carbolic. pur. liquid. . . ♏ij.
Syrup. simplicis . . . . ♏xl.
Tinct. cardamom. comp. . . . ♏x.
Spts. chloroformi . . . . ♏x.
Aquæ menth. pip. . . . ad f ℥j.—M.

S.—For an adult. To be taken every four or six hours.

The powder of opium and ipecacuanha, in ten-grain doses, was employed to induce sleep and promote perspiration. If cough was troublesome, a mixture containing about gr. $\frac{1}{12}$ of morphine, ♏ v of dilute hydroboric acid, ♏ ¼ of pure chloroform, and sufficient of syrup of lemon and water to make a dram, was employed as required.

Suppositories for Chronic Prostatitis.—For chronic prostatitis, OBERLANDER recommends the employment of a suppository containing—

℞.—Iodoformi . . . . . gr. vij ss–xv.
Solve in
Ol. amygdal. dulcis . . . q. s.
Adde
Ol. theobromæ . . . . q. s.
—ut ft. suppos. no. x.

S.—One to be introduced at night following an intestinal evacuation.

The oil of sweet almonds increases the absorbability of iodoform. The proportion of iodoform in each suppository is slowly increased from three-quarters of a grain to a grain and a half. In susceptible individuals larger quantities may occasion toxic symptoms.—*Deutsche med. Wochenschr.*, No. 53, 1891, p. 1435.

The Cure of Pulmonary Tuberculosis.—In an interesting address before the Medical Society of London, BURNEY YEO (*British Medical Journal*, No. 1620, p. 106), after considering the conditions of cure in pulmonary tuberculosis and referring to the utility of climate, air, food, and exercise in treatment, added that he had observed some excellent results from the employment of rectal injections of sulphuretted hydrogen, as also some good results from the employment of tuberculin. Of the latter he expressed the opinion that it would survive in a modified form. Antiseptic medication, faithfully employed for long periods, exerts a favorable influence upon the course of pulmonary tuberculosis. For internal administration the best agents are creasote and guaiacol.

The Treatment of Influenza.—In a lecture on influenza, BACCELLI stated that in cases marked by bronchial distress, concurrently with a feeble heart, camphor is decidedly useful in the first stage. Four grains of camphor in fifteen minims of olive oil may be injected beneath the skin every three or four hours. If camphor fail, injections of ether often succeed admirably. In other cases injections of strychnine, in doses ascending from a thirtieth of a grain every twelve hours, will often tide over a crisis. To sustain the vital powers hot wine may be given in small quantities at short intervals. In the gastro-enteric variety of influenza in the young and strong, ipecacuanha may be employed to induce emesis. When the respiration is embarrassed striking benefit is often derived from inhalations of oxygen.—*Lancet*, No. 3569, p. 220.

The Treatment of Carcinoma.—At a recent meeting of the Royal Society of Physicians of Vienna, ADAMKIEWICZ (*Wiener klin. Wochenschr.*, No. 47, 1891, p. 888) presented a case of epithelioma of the inner angle of the right eye, in which cicatrization had taken place in the course of treatment by means of subcutaneous injections of a substance called cancroin that, it was claimed, exerted a specific influence upon carcinoma.

BILLROTH, KAPOSI, DITTEL, and others, however, maintained that the progress of the case was not unusual and were unwilling to admit any specific action or curative result not to be obtained by other methods of treatment.

For Baldness.—One of the best combinations in the treatment of baldness consists of:

℞.—Pilocarpinæ hydrochlorat. . gr. v.
Otto de rosæ . . . ♏viij.
Olei rosmarini . . . f ℥iv.
Liniment. cantharid. . . f ℥iv.
Glycerini pur. . . . f ℥j.
Olei amygdal. dulcis . . f ℥ij.
Spts. camphoræ . . . f ℥iij.—M.

S.—To be rubbed well into the scalp, night and morning. WHITLA.

The Relief of Vomiting.—KENNY (*British Medical Journal*, No. 1618, p. 16) has reported the case of a parturient woman, in whom he overcame obstinate vomiting, resistant to other means of treatment, by the application of a cantharidal blister over each pneumogastric nerve at the anterior border of the sterno-mastoid muscle.

Ammonium Bromide and Antipyrin in Epilepsy.—In a second series of cases reported, POTTS (*University Medical Magazine*, iv, 5, 1892, p. 345) confirms the favorable results previously obtained in the treatment of epilepsy by means of a combination of ammonium bromide (twenty grains) and antipyrin (eight grains).

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, MARCH 5, 1892.

EXPERT TESTIMONY.

DISCUSSION of the much-discussed questions connected with the status in judicial proceedings of the so-called "medical expert," and his testimony, has been reawakened by a recent trial in New York.

We do not wish to comment at this time upon the testimony offered in the Harris trial, for the reason that an official report is not in our possession; while one of the eminent physicians who testified for the defence, PROFESSOR H. C. WOOD, of this city, has publicly stated at a meeting of the College of Physicians, that "the nonsense telegraphed in his name all over the country" was not uttered by him. Nevertheless, the fact remains, that in a case in which the life of the prisoner was at stake, testimony in direct conflict was given for the prosecution on the one hand, and for the defence on the other hand, by medical experts of unblemished reputation and of the highest rank as scientific men and teachers. Under such circumstances, what course is an intelligent juror to pursue? When suspicion of venality attaches to an expert witness, a jury can honestly ignore his testimony; but the most degraded of medical men would hardly sell himself to the prosecution in a criminal case; and it might well be in every instance, as it undoubtedly was in the recent trial at New York, that the personal and scientific character of the expert witnesses for the defence should be beyond suspicion. The experts upon either side; then, being equally trustworthy, and, so far as the jury can know, equally authoritative, what is to be done when the sworn evidence of the one is directly contradictory of that of the other? Shall the juror, with no special fitness of knowledge or training, attempt to decide the questions at issue? Evidently he can do this more readily without expert testimony than with it; for then, at least, he will not be setting his opinion against that of the specialist presumably better fitted to form an opinion. Shall he ignore the expert testimony altogether, and decide as to the guilt or innocence of the prisoner without reference to the questions involved in the evidence of the experts? Obviously such a course would be most unjust to the prisoner and unfair to society, for the cause of death, for example, must be an important link in the chain of evidence establishing the fact that murder has been committed, and fixing responsibility for the crime upon this or that individual. When the questions in dispute involve a matter of such gravity, one horn or the other of the dilemma must be chosen, if other decision is to be reached than the Scottish verdict—"Not proven." As American practice justly requires the acquittal of an accused person of whose guilt the jury entertains a reasonable doubt, the only right way out of the dilemma is acquittal. Thus justice must often miscarry, for how can a jury fail to have reasonable doubt when equally reliable and directly opposing evidence is offered on both sides?

None of these three methods—decision on technical subjects by an untrained jury, ignorring of the subject-matter of expert testimony, or acquittal because the jury has been befuddled—can be satisfactory. Is there any escape from the difficulty? It has been held—and the secular press has urged this view with some asperity—that the difficulty arises only because each side presents witnesses who are not impartial, but occupy the position of hired advocates: their duty being not to show all the facts in the case, but merely those most advantageous to the side they represent. From this point of view it is contended that the present method of securing expert testimony should be abandoned; that the expert should be an officer of the court, and that it should be his duty to investigate the facts of the case impartially, and present his con-

clusions as a judicial report, to be accepted by the jury without question. This easy solution of the problem, however, ignores the real crux. The medical sciences are not yet exact. It is only upon doubtful matters that conflicting testimony can be offered. In a case so plain that under the plan proposed the report of an official expert could be accepted by both sides unquestioned, it is extremely improbable that, even under present faulty procedure, the most astute lawyer could befog a jury without the aid of a venal witness. When the case is not so plain, the official expert must either report himself in doubt and let the jury decide, or the subject must be ignored, or the doubt must lead to acquittal—the same triad of unsatisfactory possibilities as before; or else the side against which he reports will bring its experts to criticise the report, and the other side will bring experts to uphold the report, and the same conflict of testimony confronts us once more.

On the whole, however, the method of investigation and report by an officer of the court, whose character and attainments and the manner of whose appointment are unexceptionable, has several advantages. His investigation would be deliberate; his report would be thorough and complete; bribery aside—and we are assuming bribery to be impossible—he would have no temptation to favor one side or the other; and in the course of such investigations as examination of organs and chemical analyses the whole process could be watched by a representative of the accused, whose criticisms could be made and met at the time. This plan differs from the practice that prevails in France and Germany, where we believe the accused is not represented at the investigation. The accused, moreover, should still have the right to dispute the correctness of the conclusions of the official expert, and in matters of opinion—for example, as to the significance of certain symptoms—conflicting testimony on both sides must be expected.

The animadversions of some writers in the secular press upon the testimony of medical experts is most unfair and unjust to an honorable body of men. Everyone is entitled to have his case exhibited in the best light possible; and all are agreed that it is better for a guilty man to escape for want of proof than for an innocent man to be unjustly convicted. There is absolutely no means of securing unanimity of opinion upon matters not subject to rigid demonstration; and in the present state of science it is only a minority of the questions arising in medical jurisprudence that are thus subject. A brilliant instance of rigid scientific demonstration was, however, afforded by the testimony of PROFESSOR FLINT in the recent trial of a character known as "Frenchy," and this testimony undoubtedly secured the conviction of the prisoner.

The sages of the Talmud said that "Truth was the child of Disputation." On the whole, the ends of justice are substantially served by getting all the facts and all their opposing bearings upon the record; and as we have shown, the inherent difficulty that cannot be gotten over by any device is simply this, that "doubtful things are mighty unsartain."

AFFAIRS AT THE JEFFERSON MEDICAL COLLEGE.

THE graduates and friends of Jefferson College and of medical eduation will be glad to learn of the success of the trustees in securing for the college a new site, to which it is intended to remove so soon as the proper buildings can be erected. A large area has been secured on South Broad Street, and the committee are now considering questions of construction, plans of buildings, etc.

The splendid record of work done throughout the long period of her history—the great men who have been teachers and pupils within her walls, the living monument of her ten thousand graduates—has placed the name and tradition of Jefferson in every part of our own country, and, indeed, of the civilized world, and has developed an historic momentum that should be utilized and made to serve the highest interests of civilization. In consonance with this history and possibility of usefulness and power, it now behooves her officers and alumni to seize with firm grasp the proffered opportunity of renewed life.

The old methods of institutional usefulness and work have in great part, as we all know, been outgrown, and with new science and civilization has come the need of changed methods of teaching and of research, of enlarged laboratory facilities, the free subdivision of departments, etc. Science is democratic, our nation is democratic, and, in accordance with the demands of this progressive age and of the prevalent sociological spirit, teaching facilities and functions must be multiplied and enlarged, fresh talent welcomed and pressed into service.

It is simply absurd to suppose that any single

man can drill and outfit several hundred students in one of the seven chief branches of medical science. An immense augmentation of the teaching force is demanded to conform to the educational necessities and standards of to-day.

There can be no doubt of the advisability of the endowment of chairs in all medical schools, so that even that suspicion of influence may be avoided which must exist so long as Faculties have a financial reason for receiving the largest possible number of matriculants, and for sending forth the largest possible number of graduates. It is high time we had learned the evident truth, that in medical education quality must be rated far higher than quantity.

It is also very desirable that the new move shall enable Jefferson to lead in the great reform her history has marked out for her—a practical, clinical, bedside method of teaching. All the instruction exclusively didactic and the operations only looked at cannot render the student competent to do the future physician's and surgeon's work. The immense hospital *clientèle* should be utilized for the benefit of the student and his future usefulness. Here is the place for the hundred times multiplied corps of clinical instructors and drillmasters in the routine work of the diagnosis and treatment of common diseases. In the large clinics it is too commonly true that rare cases and curiosities and the "show operations" too exclusively occupy the attention, while the simple every-day diseases—the all-important things for the student—are neglected, and the veriest rudiments and elements of clinical experience are not gained.

To live and grow, the institution of the future must be officered by men of a high ideal and endowed with a large morality. The teaching of the future must be drudgery and work, for the benefit of the student and not of the teacher, with such systematic subdivision and military precision that a hundred harmonious departments shall conspire to produce men knowing how to find disease, knowing it when they see it, and instinct with therapeutic knowledge and power.

PUBLIC TEST-OFFICES.

An important feature of the work to be done at the hygienic laboratory at the University of Michigan, at Ann Arbor, is the examination, at a nominal fee to cover actual expenses, of articles of food and drink, on request of health-officers throughout the State. Such work is already done to a limited extent, but it is proposed hereafter to enlarge its usefulness by making it available to sanitary officers of the State.

The usefulness of such a laboratory could be still further extended by allowing citizens generally the privilege of having tested, at a nominal cost, not only suspected articles of food, but such articles of domestic use as are liable, at times, to contain poisonous substances. For a number of years there has been established in Paris a public test-office, where all articles of food, beverages, etc., are analyzed and tested by experts, who also perform the duties of inspectors of markets and among the tradesmen. For a nominal sum, and in some cases gratuitously, anyone can ascertain the composition of any suspected article of food. Articles of domestic use, clothing, colored toys, wall-papers, etc., are also examined, in order to detect any poisonous ingredients that may be present.

The establishment of a public test-office would excite popular interest and be the means of instructing the people in matters closely connected with their physical well-being. Indifference to causes acting injuriously upon health is rightly attributed to the want of proper knowledge. The chrome-yellow poisoning in this city some years ago would never have reached the proportions it did, had the people been in possession of the knowledge that leads to suspicion.

It is very necessary to have test-offices and inspectors to search for deleterious articles of food or of domestic use, but it is quite as important to secure the coöperation of the public and keep active their interest in measures employed to prevent the sale or use of such articles. The public should be made to assume a share of the responsibility of noting and reporting suspected articles, and in no better way can this be accomplished than by offering free facilities for investigation.

The moral effect of establishing a bureau of investigation would be repressive if not preventive of practices now foisted upon the masses because of their supineness and lack of information. By freely offering the services of experts, the cöoperation of the public would be secured, and as a result greater progress would be made not only in detecting, but also in breaking up harmful practices that are none the less common because they so generally escape notice.

THE FIRST INSTITUTE OF HYGIENE IN THE UNITED STATES.

IN his address delivered at the opening of the Institute of Hygiene of the University of Pennsylvania, and published in THE MEDICAL NEWS of February 27th, DR. BILLINGS stated that "this is the first structure of its kind erected in the United States." In the year 1888 a building was erected for the use of the Hygienic Laboratory of the University of Michigan, at Ann Arbor. According to the official calendar of 1888–89, this building "contained a large room for general work in hygiene, a lecture-room, a microscopical room, separate rooms fitted especially for gas analysis, water analysis, and bacteriological work; a disinfecting chamber, a cold chamber, and three private rooms for original research. The laboratory is furnished with all necessary chemical, optical, and bacteriological apparatus. A full set of KOCH's bacteriological apparatus is in use. The chief purpose of this laboratory is to furnish proper facilities to those who are competent to carry on original investigations in hygiene, and it is open to any such person who desires to pursue special lines of investigation, provided he comply with the requirements for admission to the literary or the medical department of the University." Courses of instruction were given by DR. VAUGHAN and MR. (now DR.) NOVY upon Sanitary Science, Sanitary Examinations, Analytical Chemistry, Original Research on the Causation of Disease, including a Course in Bacteriology. In the friendly competition in the scientific world it is only just that credit and priority be given when due, and it is with the view of correcting any possible misapprehension that the foregoing facts are recorded.

PLAGIARISM EXTRAORDINARY.

THE MEDICAL NEWS presents its compliments to *The Western Medical Reporter*, and to a contributor to its issue of February, 1892—one CHARLES C. KOHNING, M.D., of Brussels, Ill. The editors of *The Reporter* are evidently not such good readers of THE NEWS as their contributor. The latter writes an article presumably original, but which is copied *verbatim* from the article of PROFESSOR GOODELL in THE MEDICAL NEWS of November 29, 1890. DR. GOODELL'S paper was entitled, *What I Have Learned to Unlearn in Gynecology*. Dr. KOHNING omits the word *have* in his title. There is one original sentence in Dr. KOHNING'S article, and that, as so often occurs, proves that the gentleman has also other educational and original qualities: "*As proof of this see American Indian and several other nations.*" A funny typographical blunder completes the evidences of originality. DR. GOODELL spoke of a medieval superstition—the belief in two seeds, the male and female semen, etc. To the medieval ignorance is added the modern, and we have "the existence of hoo-seeds"—with an apt exclamation point!

PROGRESS IN THE UNIVERSITY OF BUFFALO.

WE are glad to learn of the zeal and energy manifested among the officers and friends of the Medical Department of the University of Buffalo. A noble building is being erected, which will be one of the finest and best equipped in the country. At the opening of the next session the three departments of medicine, pharmacy, and dentistry will occupy this new home, and enter with fresh spirit upon what cannot fail to be a new and larger career of usefulness. The medical department has long been recognized as among our best medical schools, with an exceptionally able corps of teachers; and in upholding and leading the movement for a higher standard of medical education, the officers of this institution are to be congratulated and complimented for their success and for the work done, as also encouraged with best good-will toward the realization of further work promised.

SELECTIONS.

THE STATE BOARD OF HEALTH AND THE LABORATORY OF HYGIENE OF THE UNIVERSITY OF PENNSYLVANIA.

AT a regular meeting of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania, held November 12 and 13, 1891, a communication was received from the Trustees of this University announcing the early opening of its new Laboratory of Hygiene, and presenting a brief curriculum of the proposed line of instruction; whereupon the following resolutions were adopted:

"*Resolved*, That this Board has received with sincere satisfaction the formal announcement of the approaching opening of the Laboratory of Hygiene of the University of Pennsylvania, considering that this event marks an era in the progress, not of science only, but of civilization, in this State.

"*Resolved*, That the Secretary be instructed to communicate with Dr. William Pepper, Provost of the Uni-

versity, and with Dr. John S. Billings, Director of the Laboratory of Hygiene, suggesting a conference for the purpose of formulating a plan by which this Board may avail itself practically of the facilities to be afforded by the Laboratory for the investigation of disease, and of the means for its prevention, for the analysis of foods, water and other beverages, and for bacteriological studies.

"*Resolved*, That in a definite coöperation between the University and the State Board of Health in the prosecution of such researches this Board recognizes an opportunity not only for mutual aid, but for advantage of the greatest moment to the entire Commonwealth."

In accordance with the foregoing resolutions such a conference has been held, and to me has been assigned the duty of briefly stating the conclusions which were reached, premising, however, that they have not as yet been submitted to the Trustees, and may be, to some extent, modified before either body is called upon to consider them.

The necessity of a Laboratory of Hygiene to the State Board of Health has been urgently felt, and arises out of the duties imposed upon the latter by Section 5 of the Act of Assembly establishing it, which reads as follows:

"The State Board of Health and Vital Statistics shall have the general supervision of the health and lives of the citizens of the Commonwealth, and shall especially study its vital statistics. It shall make sanitary investigations and inquiries respecting the causes of disease, and especially epidemic diseases, including those of domestic animals, the sources of mortality, and the effects of localities, employment, conditions, habits, food, beverages, and medicines on the health of the people. It shall also disseminate information upon these and similar subjects among the people. It shall, when required by the Governor or the Legislature, and at such other times as it deems important, institute sanitary inspections of public institutions or places throughout the State."

Now, to carry out in any adequate degree the purposes of the law with regard to investigating the causes of disease, and the effects of foods, beverages and medicines on the health of the people, two things, among others, are absolutely essential: first, that the Board should have means and opportunities for making or procuring chemical analyses; and, second, that it should have means and opportunities for prosecuting what are now known as bacteriological examinations, the study of the germs of disease. And it goes without saying, that where the interests of the health and lives of five million people are concerned, these means and opportunities should be on a generous scale, and should conform to the most recent developments of scientific hygienic research, both in this country and in Europe. It does not at all meet the intention and requirements of the statute, that the Secretary of the Board should spend a few cents on test-tubes and chemicals or press his old Dolland microscope, handed down from a previous generation, into the service of the State. Nor is it fitting that this great Commonwealth, with its millions of revenue, should be depending, as it has done—I say it with burning cheeks—on the charity of private chemists, who have, in a spirit of generous patriotism, placed their services at the disposal of the Board in order to enable it, in some slight degree, to meet the claims that are constantly and properly made upon it for the analysis of suspected waters and foods. It is hoped, therefore, that the Trustees will see their way clear to allowing the Board to refer applications of this kind to the Laboratory for investigation. The Board, for its part, will make every effort to obtain from the Legislature a reasonable appropriation for such purposes, distinct from its general appropriation, which will enable it to meet at least the cost of all work done for the State. Further, Section 9 of the Act creating the Board instructs it "from time to time to engage suitable persons to render sanitary service or to make or supervise practical and scientific investigations and examinations requiring expert skill, and to prepare plans and reports relative thereto." Observe the phrases, "suitable persons," "expert skill." Heretofore the Board has been compelled to call to its aid for these objects simply medical men—intelligent, educated, sound practitioners, but without that special training and equipment which would render them "suitable persons" in any strict, technical construction of the expression, or would furnish them with "expert skill." Here, again, the laboratory will prove the right hand of the Board, giving just that instruction which a sanitary inspector needs to fit him for his special work. And, on its side, it will be the object of the Board to pursue more persistently, even than it has in the past, its purpose of obtaining a thorough sanitary organization of the State under legislative sanction and compulsion, the result of which will be to create a constantly increasing demand for just such trained practical sanitarians as this school will graduate. In this view of the case it might be the part of wisdom for you, gentlemen, Trustees, to place a certain number of scholarships at the disposal of the Board.—*From the address of Benjamin Lee, A.M., M.D., Ph.D., Secretary of the State Board of Health of Pennsylvania, at the opening of the Laboratory, February 22, 1892.*

WASHED AIR FOR HOSPITALS AND ASSEMBLY ROOMS.

AN ingenious method of purifying and clarifying air intended for ventilation is in practical and continuous operation in the wards of the Victoria Infirmary at Glasgow. The air is renewed six times an hour. Before it enters the wards it is filtered and washed by being passed through an air-washing screen of cords, formed of horsehair and hemp, closely wound over a top rail of wood and under the bottom rail, forming a close screen sixteen feet long by twelve feet high, affording nearly 200 square feet of surface. There is a constant trickling of water over this screen, by which it is kept wet, and the air, in filtering through it, has the dust and soot particles removed; when once these have adhered to the wetted surfaces a current of air of considerable velocity will not carry them through the screen, but the falling water floats them down into the drain. An automatic flushing-tank is fixed in a position whereby twenty gallons of water is instantaneously discharged over the surface of the screen every hour, to remove any accumulation of wetted dust, soot, or germs that may not be removed from the screen by the water trickling over its surface.

This goes on day and night, and in the district where

the infirmary is built—near to the Queen's Park, the atmosphere of which is supposed to be the purest in the city—a very considerable amount of soot particles is extracted by this screen. Indeed, it is stated that a piece of jute Hessian cloth that was placed in the air-current in front of the screen, in six hours became nearly as black as graphite. It is alleged that one of the chief advantages of the screen is the facility with which it removes every vestige of fog; and that during the past winter, when there were many days of fog of great density, within this building, as soon as this screen was passed, the air was beautifully clear and bright. After passing the wet screen the air is warmed by coming into contact with steam-heated coils.

The air enters each ward by wide, shallow ducts, placed along the wall five feet above the floor; the incoming air is directed toward the ceiling and is diffused; it drives out through openings at the floor levels the air that had previously filled the ward. Recent experiments made on the quality of the air taken from three feet above the floor and three feet below the ceiling are stated to have shown that the air at three feet from the ceiling had no organic matter in it, and that the air of the ward generally was almost entirely free from microbes or moulds.—*British Medical Journal*, No. 1622, p. 255.

CORRESPONDENCE.

PRACTICAL METHODS OF SANITARY INSPECTION.

To the Editor of THE MEDICAL NEWS,

SIR: Your recent editorial article on the inspection of dairy cattle calls attention to a very generally overlooked department of State and municipal sanitary work. The dangers of meat and milk from diseased cattle are so evident, that they should no longer give rise to argument, but the question as to what per cent. of our food-supply from this source is affected is one that demands the most earnest attention of all practical sanitarians. I am convinced that quantities of diseased meat and milk are often sold by those who are ignorant of its character and who really believe it to be of the best quality. As an illustration, I may mention that our meat-inspector has more than once found it necessary to condemn meat just received from Kansas City, bearing the stamp of approval of the government inspectors at that point. In some of this "approved" meat abscesses have been found at or near the vertebræ or deeply seated in the loin.

It is most difficult for municipal boards of health to exercise authority in these matters, for if any obstinate shipper chooses to dispute their authority, he can give them an endless amount of trouble. It is indeed fortunate that in very many instances the shippers are anxious to do what is right and to coöperate with local authorities in these inspections. But the interests of a community ought not to depend on the whims or good humor of any interested parties, however honest their intentions, because it is hard to say at what time interest may blind their eyes. State boards of health should exercise jurisdiction over such matters, so that small communities would not be forced to go to the expense of maintaining a system of food-inspection in order to protect themselves against the importation of diseased meats.

The field for the local board of health seems to be broad enough if only home-killed meat and the regular milk-supply of the city are properly inspected. By a wise exercise of the power of issuing licenses to milk-dealers, the city or town may find a way of stretching its authority over the dairies beyond its limits, the milk of which forms part of the city's supply.

In this city we have found such a plan to work well, and the dairyman who will not submit to an inspection of his dairy, barns, cows, and pasture, understands that he runs the risk of having his license revoked, in addition to the added ruination of publication in the daily papers of his refusal, with the reasons therefor.

I enclose copies of the blank forms[1] used for making a record of these dairy-inspections, which are conducted by the meat and milk inspectors together. In addition,

---

[1] No. Date Name
Residence No. in family
Habits Previous sickness
Disease time of
Number affected history
House: age frame, brick
No. of floors No. of rooms living
sleeping bath, closet, kitchen sink, connected with
Rooms ventilated; dry, damp.
Plumbing
Cellar; size walls floor
damp, dry ventilated.
Ventilation under house
Previous sickness in house
Premises: No. of lots proportion covered
Sewer connection
Cesspool; leaking, tight; privy-vault; leaking, tight;
hopper, plunger Water-supply
Milk-supply
Disposal of slop of garbage
Adjacent premises; condition
Alley Ditch Shade trees

Daily inspection No. Name of Dairy Location
Owner No. of Certificate When issued
Sickness in house: What When How long
Previous Inspections of Dairy, when No. Result
Previous Inspections of Milk, when No. Result
No. of Wagons Sections of City supplied
No. of Cows Kind of pasture Area Feed in Winter
Stable: Size Height of Roof Material No. of stalls
Distance from house Direction, up, down hill
Distance from well Direction, up, down hill
Material of floor clean, unclean.
Drainage good, bad, indifferent; into what
Disposition of Manure: Temporary final
Distance of manure pile from house from well
Source of Water-supply: For persons for cows
Distance to house to stable to privy to cesspool
to manure pile
Milking: When done by whom
Milkers: Male female clean, unclean.
Examination of Cows: Clean Ever curried
How many healthy How many unhealthy
Cows condemned Sickness or disease
Milk: Where milking is done Milk stored until delivery
How long Kind of vessels Amount
Specific gravity rich, poor, per cent. of cream
Per cent. of solids Per cent. of water
Adulteration No. of samples taken

we have added to our list of routine questions asked in the sanitary inspection of houses in which any contagious disease has existed, this one of "milk-supply."

During last week the inspectors found it necessary to kill two dairy cows, one for pleuro-pneumonia and the other on account of tuberculosis. In each instance the lungs and omentum were removed and brought to the Health-office, where the diagnosis was confirmed.

In conclusion, every city ought to have a system of inspection of the dairies from which the citizens obtain their milk-supply; the dangers of infected milk are too hideous to be overlooked by any properly conducted Health-office. A little money expended in this work will do an amount of good work that can never be measured by dollars and cents. And if a whole year's work were to give no greater results than those obtained by our inspectors in the one week mentioned, it would still be well worth the money outlay.

Very respectfully, Wm. P. Munn.

Denver, Colorado.

SCARLATINA OR RÖTHELN.

To the Editor of The Medical News,

Sir: In The Medical News of February 13, p. 186, Dr. W. R. Lee reports a number of cases that, by reasoning and exclusion, he considers as scarlatina. I have had a similar experience; the sequelæ were like those in Dr. Lee's cases, except that in four there was evident desquamation. I was in a quandary as to a diagnosis, for the cases were among young and old, and I could trace the spread by contact—visiting neighbors, etc.

In the course of my investigations I found the article of Malcolm Morris on "Rötheln, or German Measles," with the description of which my cases best accorded. There is, however, a good deal of risk attendant upon a diagnosis of Rötheln, with the permission for the patient to come in contact with other persons. It is safer to consider a doubtful case as one of scarlatina, and to isolate it and treat it accordingly.

In one case, in a child, the onset was sudden, with vomiting; the rash was distinct; the strawberry tongue was plain; the glands were swollen, also the uvula, tonsils and posterior walls of the pharynx; the pulse was 140; the temperature 103.6°. On the following morning, however, the pulse was 90, the temperature 99°; the rash was distributed all over the body, except on the neck and face. The redness disappeared on pressure, but at once returned when the pressure was removed. In only one or two of all the cases did the rash appear upon the face.

Morris describes Rötheln as an acute infectious disease, characterized by an eruption of red blotches, slight sore-throat, coryza, and but little constitutional disturbance. If the spots be large, they are generally irregular in shape; if they be small, they are more crowded together and present an appearance more resembling the eruption of scarlatina. He speaks of the rash as appearing on the face, but in my recent cases there was none on the face; although in some similar cases seen four years ago the rash did appear on the face. The rash lasts about two days and then fades away, leaving a slight brown stain that gradually disappears; it is rarely followed by desquamation, and if at all, in minute scales. In my cases, except in those sick before the rash appeared, the rash faded within from forty-eight to seventy-two hours, and the desquamation was scaly. The constitutional symptoms that accompany the appearance of the rash are chiefly those of catarrh, and occur at the same time as the rash appears or precede the rash by less than twelve hours—not by some days, as in measles.

The tongue is coated with white fur, through which a few large papillæ can be seen (our strawberry tongue), more often at the tip than elsewhere (such was the case in my patients). The fauces are somewhat injected and the tonsils may be swollen.

An important symptom is the tendency of the lymphatic glands to become enlarged. This is more constantly the case with the glands of the neck, especially with those situated behind the sterno-mastoid muscles, but the glands of other parts of the body are not always exempt, as two of my patients complained of swellings in the groin, where the lymphatic glands were swollen and tender. The prognosis is favorable. No special treatment is required.

As in many families in this vicinity one or other member has presented the rash without the attendance of a physician, and as I was consulted in only two or three cases, I am inclined to adopt the diagnosis of German measles, or Rötheln.

A. D. Ayer, M.D.

Charlottesville, Indiana.

NEWS ITEMS.

United States Marine-Hospital Service.—A Board of Officers will be convened in Washington, May 2, 1892, for the purpose of examining applicants for admission to the grade of assistant surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: 1. Physical. 2. Written. 3. Oral. 4. Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing and begin with a short autobiography by the candidate. The remainder of the written exercises consists in examination on the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and the natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order, as vacancies occur.

Upon appointment, the young officers are, as a rule, first assigned to duty at one of the large marine hos-

pitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years of service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination, as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons eighteen hundred dollars, and surgeons twenty-five hundred dollars a year. When quarters are not provided, commutation at the rate of thirty, forty, or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, 10 per centum in addition to the regular salary for every five years' service up to 40 per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. Further information or invitation to appear before the Board of Examiners may be obtained by applying to the Supervising Surgeon-General, Marine Hospital-Service, DR. WALTER WYMAN.

Association of American Physicians.—The annual meeting of the Association of American Physicians will be held May 24, 25, and 26, 1892, in the Medical Museum and Library, Washington, D. C.

The subject selected for discussion is "Dysentery." Dr. William T. Councilman, as referee, will consider the etiology and pathology, and Dr. A. Brayton Ball, as co-referee, the symptomatology, complications, and treatment.

The following members will present papers:

Henry M. Lyman: The President's Address. Charles Carey: The Production of Tubular Breathing in Consolidation and Other Conditions of the Lungs. Samuel C. Chew: (Title to be announced). William C. Dabney: A Contribution to the Study of Hepatic Abscess. I. N. Danforth: Tube Casts and their Diagnostic Value. George M. Garland: The Treatment of Follicular Tonsillitis. Heneage Gibbes: The Morbid Anatomy of Leprosy. Hobart A. Hare: A Collective Investigation in Regard to the Value of Quinine in Malarial Hematuria or Malarial Hemoglobinuria. A. Jacobi: (Title to be announced). W. W. Johnston: Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation. Thomas S. Latimer: Alcoholism. Morris J. Lewis: A Study of the Seasonal Relations of Chorea and Rheumatism for a Period of Fifteen Years. Morris Longstreth: (Title to be announced). Francis T. Miles: A Case presenting the Symptoms of Landry's Paralysis, with Recovery. William Pepper: Report of a Case of Glanders, with Results of Bacteriological Study. T. Mitchell Prudden: (Title to be announced). George M. Sternberg: Practical Results of Bacteriological Researches. Charles G. Stockton: Misconceptions and Misnomers Revealed by Modern Gastric Research. William H. Thomson: The Significance of Intermission in Functional Nervous Diseases. Victor C. Vaughan: Certain Toxicogenic Germs found in Drinking-water. B. F. Westbrook: Studies in Hypnotism. James C. Wilson: Pulsating Pleural Effusions. George Wilkins: The Cold-water Treatment of Typhoid Fever.

The American Medical Association will hold its forty-third annual session at Detroit, Mich., June 7, 8, 9, and 10, 1892. Dr. J. S. Cain, of Nashville, Tenn., will deliver the Address in General Medicine; Dr. John B. Hamilton, of Chicago, Ill., the Address in General Surgery; Dr. Charles A. Lindsley, of New Haven, Conn., the Address in State Medicine. DR. HENRY A. WALKER, of East Detroit, is the Chairman of the Committee of Arrangements.

The International Medical Magazine is the name of a new monthly, edited by Dr. Judson Daland, and published by the J. B. Lippincott Company. The first number bears date of February, 1892. It consists of one hundred and twelve pages of reading-matter, made up of sixty-nine different articles, distributed among seventeen various departments.

Neurologist to Randall's Island Hospital.—At a recent meeting of the New York Board of Commissioners of Public Charities and Correction, Dr. William James Morton was appointed neurologist to the Randall's Island Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Stirpiculture; or, The Ascent of Man. By A. P. Reid, M.D. Pamphlet, 1891.

The Microscope and Histology. By Simon Henry Gage, Associate Professor of Physiology. Third Edition, entirely rewritten. Part I: The Microscope and Microscopic Methods. Ithaca, N. Y., 1892.

Nursing in Abdominal Surgery and Diseases of Women. By Anna M. Fullerton, M.D. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1891.

Leucocytes in Inflammation, etc. By William Travis Howard, Jr., M.D. Reprint, 1892.

A Case of Congenital Malformation of the Heart. By William Travis Howard, Jr., M.D. Reprint, 1892.

Diseases of the Skin. By W. Allan Jamieson, M.D., F.R.C.P. Edin. Third Edition, revised and enlarged. Illustrated. Philadelphia: Lea Bros. & Co., 1892.

Treatise on Diseases of the Lungs and Pleura. By the late Wilson Fox, M.D., F.R.S. Edited by Sidney Coupland, M.D., F.R.C.P. Philadelphia: P. Blakiston, Son & Co., 1892.

Pneumonic Fever. By Edward F. Wells, M.D. Reprint, 1892.

The Relation of Land Monopoly to Population Health. By George Homan, M.D. Reprint, 1891.

Land Liberation. By George Homan, M.D. Reprint, 1892.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1891. Washington: Government Printing Office, 1891.

Insomnia and Hypnotics. By E. P. Hurd, M.D. Detroit, Mich.: George S. Davis, 1891.

A Possible Source of Disease. By Charles Hope Merz, A.M. M.D. Reprint, 1892.

Relations Between Chorea and Epilepsy. By G. R. Trowbridge, A.M., M.D. Reprint, 1892.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

ON THE NATURE AND TREATMENT OF FORMS OF DISEASE CHARACTERIZED BY INDIGESTION, THE PRESENCE OF BILE, URATES, AND URIC ACID IN THE URINE, AND BY NERVOUS SYMPTOMS.[1]

BY W. W. JOHNSTON, M.D.,

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THERE is a group of cases often met with in practice that has a great interest for us, on account of the large number of the associated symptoms, the obscurity of their origin, the differences of opinion as to their nature, and the difficulties encountered in their treatment.

The patients included in the group to which I refer give us histories that are more or less alike in their essential features, although the complaint for which relief is sought may be very different in different cases. It may be that distress after taking food, or obstinate constipation, or loss of flesh and color are the reasons for their applying for treatment; or any one of a very large number of symptoms of functional disorder of the nervous system may have excited their apprehension of the existence of some serious organic disease. These symptoms range all the way from simple headache or vertigo to absolute inability to perform any mental work. The history of the case is generally something like this:[2]

The disorder began many years ago. The patient's life has probably been a sedentary one, or one filled with great care and anxiety; his hours of eating and sleeping have been irregular, and all the influences have been excited that are likely to disturb the working of many parts of this delicately adjusted piece of vital machinery, which was not made to run forever without friction or break, if no attention whatever is paid to the conditions necessary to its perfect working. Among the earlier symptoms were a loss of appetite, a coated tongue, distress after eating, and constipation. These have continued and exist at the present time. The distress after eating includes a sense of fulness or weight in the abdomen, which may begin almost immediately after taking food, but is more marked in from one to two hours, and is accompanied by borborygmi and flatulent distention. The patient is depressed in spirits concerning his health and his inability to work with his former energy and interest. Mental depression may be the most marked symptom presented to us. There is frequently insomnia, but more frequently drowsiness, and a sense of weakness and lassitude or inertia after a meal, and, as a rule, after the midday meal.

There are many other ways in which the nervous system may be implicated. Irritability of temper, hypochondriasis or melancholia, hyperesthesia, paresthesia, or anesthesia may all be seen; pruritus is not uncommon, and there may be urticaria. The other special senses may show some slight disturbances. Suddenly developed symptoms appear, as vertigo, which is sometimes only noticed on turning the head to look behind, or on stooping and rising, and there may be palpitation of the heart and dyspnea.

If the urine is examined it is rarely normal. I have before me now the report of the urinary examination of a patient who had suffered for years with the most obstinate constipation, with other symptoms like those mentioned. The color was amber, the specific gravity 1020, the reaction acid. The urates were in excess; there was no sugar, and no albumin, but there was a large quantity of bile. On microscopic examination there were found many uric acid crystals and amorphous urates. The skin of these patients is almost always pale; the proverbial muddiness may be present.

This brief description will give as good an idea of what is usually found as if I were to give the record of cases, but the following brief histories will perhaps illustrate the association of symptoms most usually found. The first of these is in the words of the patient, who wrote it at my request, and if his description may be thought to include exaggerations or perversions of statement, these exaggerations or perversions of subjective symptoms must be taken as symptoms showing the mental state that is more or less characteristic:

CASE I.—"My age is twenty-five; my occupation is that of a stenographer and typewriter. I have done much mental work; I have not used liquor.

[1] Monthly essay read before the Medical Society of the District of Columbia on November 25, 1891.

[2] All cases are excluded here that at any period in their history show any decided alteration in any organ, as dilatation of the stomach, cirrhosis of the liver, degeneration or other changes in the kidney, etc.

My diet has consisted of condiments, much meat, potatoes, fats, sugar. I have always eaten everything hurriedly, and improperly masticated; I drink much water. I have taken very little exercise. My previous health was good until I was nineteen or twenty years old; then emissions (nocturnal) began —from one or two per week to one in two weeks. There was the gradual development of acne. I was also drowsy in the evening, and unable to keep awake. In November, 1889, I began active stenography and typewriting, and study at night. The acne increased. There was bad digestion, coated tongue continually, thirst after supper, heavy stomach, and great appetite. I always got sleepy about 10 or 11 o'clock in the morning when at work; sometimes, about 2 or 3 o'clock in the afternoon. I also had nasal catarrh. Sometimes I felt well, and at others ill; I was always very sleepy from one to two hours after eating. Nose red and shiny. During the forenoon, while typewriting, my head felt as if it were too full, and I had a sensation of heat about the scrotum and anus.

"Milk and food containing much sugar caused greatest heat and sweating of scrotum. My hands and feet were cold at times, but not moist. I was also more or less constipated. Nocturnal emissions continued; memory became poor. This condition was the same until 1890, when I began to have a feeling of a band around the top of my head after work, and heat of back of neck, oppression in back of head, with occasional headache; drowsiness continued.

"At present (November 22d) I suffer most from bad feelings about my head, from a sense of oppression and drowsiness after eating. My complexion is muddy, and the acne continues, but is not so bad. My hands and feet are cold and clammy on taking exercise. I have a feeling of constriction at the pit of the stomach, and I have also a feeling of pulsation there. I wake up every morning about 4 o'clock.

"In May last, after one month's rest, I felt much better, and have not suffered so much since; I was at that time, and have been since, on light diet, avoiding much beef, all fats, and indigestible food. The emissions have almost stopped. I still have weakness in the knees, and am not inclined to make any effort, mental or physical. The bowels are constipated, the movements small and hard."

CASE II.—Mrs. X. in her early life had been in perfectly good health, but at the age of twenty-five found that she was growing very stout, and devoted herself for some years to persistent dieting to reduce her weight. Her plan consisted of eating almost nothing—one chop and a piece of bread in the day, and some indulgence, as ice-cream, at night. She walked many miles daily, and, in time, had the satisfaction of reducing her weight by many pounds. After this she suffered from a severe nervous shock, and for some years she was much depressed in spirits, and travelled about from place to place. She had always been more or less constipated, but there was a gradual aggravation of this condition, and, at the time of which I speak, the bowels were not moved except by purgatives.

During the winter of 1889–90 her nervous system was extremely irritable; she suffered from the most obstinate urticaria, which, from this time until I saw her first in the winter of 1890–91, continued to be her most troublesome symptom. The slightest pressure of her collar or clothing at any point would produce an immediate outbreak of the rash; at no hour of the day or night was she entirely free from it, and life was, in consequence, a burden. For a short time I tried to benefit the urticaria by using the galvanic current, applying one electrode to the base of the brain and spine, and the other to the periphery, but no good resulted from this; on the contrary, the electricity always provoked an outbreak of the rash.

From the abuses to which her digestive organs had been subjected, her digestion was more or less disturbed, the appetite was capricious, and she suffered after eating. Headaches were also of frequent occurrence, and were connected with constipation and unusual indigestion. There was no loss of flesh and no anemia, but her complexion was never clear, the skin having a yellowish, muddy look. I have three separate analyses of her urine before me as I write. The specific gravity was in the first 1031, in the next 1020, and in the most recent 1014. Urates were in excess in all, and in all but the last uric acid crystals were numerous. Bile was present in varying quantity in the first two, absent in the last. There was no albumin and no sugar.

The treatment was chiefly dietetic; beef, mutton, eggs, ham, etc., being forbidden, and chicken, fish, and oysters advised. Vegetables with excess of starch, and all indigestible foods were excluded; she was advised to masticate her food well. A purgative was given regularly every other night, and pepsin and pancreatin were prescribed after food.

Under this treatment the digestion improved, and she had fewer headaches; the bile disappeared from the urine, and the urticaria lessened, but constipation continued. After a summer's stay in an elevated region, where she lived out in the open air nearly all of the time, she returned to the city. She now has urticaria occasionally only, the bowels are frequently moved spontaneously, and her nervous symptoms are less marked. The diet is still continued.

CASE III.—Mr. F., forty-eight years of age, was a chronic dyspeptic for years as the result of overwork and over-eating. Being rich, he abandoned business, and lived abroad under treatment for some years, and returned to this country five years ago. When he came under my care he was better, but was compelled to live strictly according to rule, to avoid subacute attacks of gastro-intestinal indigestion. He had all the appearances of an intestinal dyspeptic—bad complexion, anemic skin, with flabby muscles and reduced weight; tongue always coated and bowels irregular. He was nervous, irritable, and disposed to hypochondriasis. The urine, on repeated examinations, was found to have a high specific gravity, contained urates in excess, uric acid crystals and bile in considerable quantity. He finds relief only by strict diet, and as the temptation to imprudence is very great in

his life, he has numerous occasions for practising self-control. In this way he is usually comparatively well.

CASE IV.—Mr. S. is an overworked professional man, having had a continued strain on his nervous strength for years. His hours of eating have been very irregular, and he has eaten heartily of nitrogenous foods, using stimulants in moderation. For ten years he has been gaining in flesh and now weighs much more than a man of his size should weigh. Several years ago he consulted me; his urine contained lithates in excess and had a high density. I advised diet and lessened work and called his case "lithemia." He has not followed my advice strictly, and has just been passing through an attack of "lithemic fever," suffering from epigastric and costal pains, loss of appetite, gaseous distention of the abdomen, and constipation. The urine has been loaded with urates, has contained some bile, uric acid crystals, a few fatty casts, and 4 per cent. of albumin. For years his nervous system has been irritable in the highest degree, and he has had a restless, unnatural energy which has been a part of his excess of work.

CASE V.—Mr. C. was a business-man, engaged in work of great anxiety and responsibility. He suffered a great shock in the death of an only son, and after travelling for some months, returned home and devoted himself with renewed and excessive energy to his work. He had always had periodic "bilious attacks" with vomiting, headache, and constipation, but, after the shock referred to, these attacks became more severe and more frequent. His strength began to fail, and finally he was compelled to give up business, and he came to Washington for rest and diversion. I was consulted by him on account of general, obscure bad feelings. I found him thus—nervous, restless, hypochondriacal, complaining of indigestion and constipation. The urine, examined on several occasions, always contained urates and uric acid in excess, bile in quantity, and had a high density. The slightest illness of any sort caused great prostration (subjective) and compelled him to remain in bed for some days, from inability to take enough food to cause a rapid return of strength. Constipation was always marked at these times. Under the effect of a restricted diet, out-of-door life, and rest from work, he gained strength and appetite, the digestion improved, and the condition of the urine changed for the better. But the susceptibility of the nervous system and the digestive system to disturbances from slight causes continues up to the present time.

CASE VI.—Mrs. G., aged fifty-eight years, was always a strong and healthy woman, with the exception of occasional subacute rheumatic attacks, involving the muscles chiefly. For this she has gone every summer to the Warm Springs of Virginia and has returned home improved. In June last she had an attack of subacute gastro-intestinal catarrh, which confined her to her room for a week. The urine then had a density of 1030, contained an excess of urates and uric acid, a large quantity of bile, and a trace of albumin. During the summer, under a strict diet and aids to digestion, she was able to eat more, but she continued to lose flesh, remained anemic, and was constipated, nervous, and depressed.

In September the urine was almost normal, containing only a trace of bile and her general symptoms were better, but she had gained no flesh and was still anemic. At the present time the urine contains bile, but is otherwise normal. She feels stronger, better, has a good appetite and better color, but has, as yet, gained no flesh. The nervous system has never been much disturbed. She has been depressed about her condition, but that is all.

These cases, and others like them, may be divided into two classes, both having associated digestional and nervous symptoms, but in one the nervous, and in the other the gastro-intestinal and hepatic disorder is more prominent. It is not difficult to recognize the symptoms and to associate them with the organs with which they are connected. In a general way we know that digestion and nutrition are out of order, that the secretion of urine is abnormal, and that the nervous system is deranged, but it is not so easy to give a *name* to the affection or to decide as to the seat of the primary disorder.

What is the nature of the affection? Is it to be found described in text-books? I think in this case, as in many others, we will find that everyday experience with disease does not always conform to the clear-cut teachings of the text-book, and that we cannot always label our cases as satisfactorily as we would like. In other words, human beings have a way of being ill through and through sometimes; they associate their symptoms in such a complex way, that we are not able to call their maladies by any one name or even by any compound name. In cases such as those described, no one name can be given to the condition which might not be replaced by some other name equally applicable. Personal bias will lead to a varied choice of terms; functional disease of the liver, intestinal indigestion, catarrh of the small intestine, colon catarrh, constipation, neurasthenia, lithemia, chronic dyspepsia, atonic dyspepsia, anemia, and hypochondriasis are names used with more or less claim to correctness. Each is correct in so far as it points to some striking feature, but it does not explain or express its relationship to other associated symptoms. The problem is to find out what is the *pathologic basis upon which the symptoms rest* and what is the sequence of events in their history.

Two theories can be suggested, between which it is difficult to choose, since both offer a rational explanation of the mode of origin and symptoms, the one placing the initial disturbance in the digestive system, the other in the nervous system. According to the first, the earliest etiologic influence

was in the patient's irregular habits of eating, his hurried meals and imperfect mastication; these made gastric digestion less perfect, and the acid mass passing through the pylorus was in a less perfectly digested state than it should have been.

Incompleted gastric digestion always involves fermentation; hence the duodenum is made to receive, in place of the soft, acid chyme, a mass containing much unaltered or partly altered nitrogenous matter, along with starches and fats, the whole in a state of fermentation, and bacterial multiplication. The task thus imposed upon the intestine is beyond its power to perform; its own work and the stomach's unfinished work must be done, and decomposition must be stopped. Up to a certain point the pancreatic and intestinal juices and the antiseptic bile are able to meet the demand, but sooner or later the time comes when the digestion of fats, starches, and albuminoid matters in the intestines is delayed or incomplete; decomposition must follow, with resulting formation of organic alkaloids. The liver function is deranged, for bile and urates in excess appear in the urine. These conditions are sufficient to explain many of the symptoms, such as distress, flatulent distention, and borborygmi beginning from one to two hours after eating, constipation and the loss of weight and of strength, because absorption and nutrition must suffer along with digestion.

There yet remains one important feature of these cases to be included in this explanation, namely, the disturbances in the nervous system.

It is well known that microörganisms exist in great numbers in the normal intestine; they are derived from food or water. Their multiplication is attended by the decomposition in the intestine and by the development of toxic products which, in health, do no harm, as they are eliminated in the stools and the urine, or are all destroyed in the liver (Bouchard). The putrefactive processes that develop toxic substances are quite distinct from the digestive processes caused by the action of the ferments of the gastric and intestinal juices.

So soon as the peptones pass from the stomach into the intestines they undergo changes that result in the development of ptomaïnes and leucomaïnes. Gastric juice outside of the body brought in contact with fibrin and then subjected to the action of amylic and butylic alcohol, produces an amorphous alkaloid that kills frogs in doses of from five to ten centigrams, and hares in the dose of one gram.

Indol may be taken as a type of a poisonous alkaloid formed by putrefaction, and constantly found in the intestine. It is formed by the decomposition of tyrosin, which is produced by the action of the trypsin of the pancreatic secretion on peptone. Thus the intimate result of normal digestion is fermentative decomposition, with the development of a poison. Phenol and skatol are also due to intestinal putrefaction, and stercorin and excretin result from bile decomposition. In health, as I said, poisons are eliminated before they can do harm, but if any changes occur that delay digestive activity, fermentative processes are increased and the intestine becomes filled with a greatly increased number of microörganisms and a correspondingly greater amount of toxic material. Under these circumstances elimination does not free the intestines sufficiently, absorption takes place, and the system becomes infected by the alkaloids of decomposition. Constipation, by delaying the chief means of escape, undoubtedly favors decomposition and absorption, and is a potent factor in disease.

Brunton has shown that the liver stands at the gateway, receives these absorbed poisons into its substance, destroys some of them (as nicotine), removes others from the blood in the manufacture of bile, and forces them back with the bile into the intestinal canal. Here, if they are not expelled, they are reabsorbed, to pass again into the blood through the liver, and to reënter the intestines, and thus the round is continued without the entrance of the poison into the general circulation. If this last should occur, from excess of poison-production or from the failure of the liver to perform its work, general infection would result. Ludwig and Schmidt-Mulheim have found that the blood ceases to coagulate and the circulation is greatly depressed by injecting peptones directly into the general circulation.

Now the point to which I wish to bring these remarks just made is that, given this intestinal decomposition and absorption of toxines, there is a reasonable probability that the resulting infection of the organisms will lead to reactions everywhere, but particularly in the nervous system, and that the hypochondriasis, mental inertia, irritability, and unrest that characterize these cases are the direct results of this infection.

Acute indigestion is sometimes attended with alarming symptoms, resembling those of acute poisoning. The faintness, intermittent pulse, and languor, of which, after eating, dyspeptics complain, may all be due to the action of these poisons on the nerve-centers. Few men have not suffered at some time in their lives from that loss of energy and drowsiness that follow their hurried meals, and we have all many times seen this symptom occur in connection with well-defined intestinal indigestion. The ordinary explanation of mechanical distention and local pressure will not explain these symptoms. The fact that they follow a small meal as well as a large one, and that they entirely disappear when the digestion improves, is a sufficient proof of their

dependence upon fermentative indigestion in the intestines. Headache, giddiness, sleeplessness, sudden loss of consciousness, convulsions in children, have always been thought to be reflex in nature when accompanying indigestion; but it seems in the light of our present knowledge, that they are much more probably due to the presence in the blood of absorbed and non-eliminated poisons that immediately affect the nerve-centers. These symptoms resemble very much the effects of well-known poisons, as curare, for example, and from the suddenness of their onset and quick relief, their relationship to the time of eating, and absence at other times, it seems as if during digestion poisons were sometimes generated in overwhelming doses.

In lithemia there is a close association of nervous symptoms with the presence of urates in the urine. Mental depression can be expected if the urate deposit is large, while with a clear and abundant urine the mind is bright and hopeful. While we do not know what is the precise cause of this excess, we do know that it is always aggravated by an excess of nitrogenous food, the result of overtaxing an enfeebled duodenal digestion.

It is thought that the liver is more closely connected with the formation of urea than any other organ, and that disturbed function in this organ will lead to excess of uric acid and urates in the blood; and it may be that it is this same disturbed hepatic function that prevents the destruction of absorbed intestinal poisons. There is certainly a very close relationship between nervous symptoms in the cases described, and the excess of bile, urates, and uric acid in the urine.[1]

A recent writer[2] attributes some cases of insanity to absorption of toxic agents developed in the course of gastro-intestinal and hepatic disorders, especially gastro-intestinal catarrh. He refers to his asylum experience as showing that he has averted an impending aggravation of symptoms in mild cases of insanity by a brisk mercurial, followed by a few doses of compound jalap powder, and he refers to a suggestive case reported by Willoughby,[3] "in which acute maniacal symptoms, occurring in a man about fifty years of age, were promptly controlled and his reason restored within twelve hours by copious diaphoresis from a hypodermatic injection of pilocarpine." It was assumed that the elimination of a poison by sweating averted danger.

The question of the continuous production of toxic substances in the intestinal canal in health, and the protection of the organism by physiologic elimination, as well as the auto-intoxication of the organism by the absorption of poisons in alterations of the functions of the gastro-intestinal tract, was developed in detail by Professors Albertoni and Silvia at the meeting of the fourth Italian Congress of Internal Medicine held in Rome. Prof. Silvia enumerates the following substances as probable poisons: peptoxine, organic bases (ptomaïnes and leucomaïnes), indol, phenol, lactic acid, ammonia, sulphuretted hydrogen, acetone, etc.

The direct proof of the fact that the nervous phenomena in such cases are due to the absorption of toxic matters from the intestine is not yet found, but the argument in favor of the theory is a forcible one. The existence of indigestion is known by the symptoms; the presence of toxic matters in the intestines in health is proved; fermentation and decomposition constitute the source of this class of substances, and the greater the decomposition (as in indigestion), the greater is their number and amount. In disease, this excess is shown by finding in the urine sulphuric acid, phenol, indican (resulting from transformation of indol), acetone, ammonia, diamine, the alkaloids, and peptones. The relationship of acute indigestion and nervous disturbances, and the association of fermentative dyspepsia with nervous symptoms and an excess of these products in the urine and feces, give sufficient grounds for adopting this theory as reasonable.

The second theory, which is a plausible one, is that the original cause is in a fatigued or overstrained nervous system; that a disordered nervous apparatus does not regulate the functions of the body, and that through the disturbed vasomotor and sympathetic functions the digestive secretions are deficient or altered in quality; hence result indigestion, intestinal catarrh, and all the symptoms of innutrition.

It is primarily, then, according to this view, a neurasthenia—that is, there is an atonic, enfeebled nervous system that does not control and coördinate the functions under its control; with this starting-point we can predict any functional derangement anywhere. The many symptoms connected with the nervous system, their very early development and prominence, go far to support this view, and it is this explanation that is most frequently accepted in these cases. But the difference between the two theories is more apparent than real, and both may be true. I can understand how at one time the overstrained nervous system is the more readily disturbed by the toxic influence, due to indigestion,

[1] In the latest communication on the subject of urea-formation by the liver, the authors do not dispute the idea that the liver produces urea or that there is more urea in the hepatic than in the portal vein; but they do not believe that the liver is the sole or the principal urea-producing organ. They admit that in states of excitation or hyperemia of the liver the production of urea is exaggerated, but think the urea may arise in a process of disassimilation of all the tissues of the body.—*Boston Medical and Surgical Journal.*

[2] Ayres: THE MEDICAL NEWS, July 4, 1891, p. 1.

[3] London Lancet, No. 21, vol. i, 1889, p. 1030.

which exhaustion of the nervous system has helped to bring about, and, again, how nervous symptoms may be due to general infection by absorbed poisons alone; or it may be that there is a double origin, and that the total is not complete until the digestion and nerve-supply and associated functions are involved.

In the present state of our knowledge, I do not see how any more definite view can be reached. We have advanced to the point of understanding the danger of indigestion and constipation, the existence and probable absorption of toxic matters in the intestine, the close connection of the liver with these conditions and with the urinary changes, and from this knowledge we gain important indications as to treatment; but beyond this it does not seem possible to go at the present time.

Treatment.—No treatment can be successful in cases like these which does not result from a survey of the whole field of disorder. It is a case in which comprehensiveness of vision rather than minuteness of observation is necessary—the sort of visual power that comes from a knowledge of the physiology of all the functions and their individual and combined variations.

Exactly the opposite mental state is developed in specialism, as seems to me needed for studying and treating these cases. Here the organ studied —larynx, eye, uterus, or nerve-center—is made the starting-point of observation and comparison, and all associated phenomena revolve round a central axis, but the interdependence of organs and functions, and the relative influence of each in bringing about the result, is not easily grasped by any one person, but still less by the too special student.

In this case, whatever may be the starting-point, whichever is the pathogenic theory most worthy of adoption, the plan of treatment involves a restoration of the altered functions of the digestive and nervous systems to their normal state by improved blood-supply, and a higher and better nutrition of all the tissues.

Digestion is not perfect from defective and deficient secretion of digestive juices that are insufficient and defective from altered blood-supply. Again, the blood is altered in quantity and quality from imperfect digestion, intestinal decomposition, and deficient or altered blood pabulum. In this vicious circle it makes no difference where the coil begins. "All roads lead to Rome," and treatment must travel simultaneously over all roads and by-paths toward cure. A combined and harmonious plan directed to attaining the one object—cure—is almost sure in the end to be successful, while any method that, while benefiting one organ and function, overlooks the condition of other correlated disturbances, is unwise and useless. The patient's confidence must first be won, and a close relation must be established between him and his physician. Next, the surroundings must be made as congenial as possible, and anything that can make him hopeful and happy must be supplied.

The prophylactic treatment, of course, includes the avoidance of all causes that overstrain or disturb the functions of digestion and the nervous system. I need not detail in what way the brain and nerves should be kept in the highest state of efficiency by avoiding overwork, and by being spared over-anxiety and worry, and by diversity and diversion in travel. These rules are clear enough; the only difficulty is in carrying them out.

In regard to diet, the lesson must be taught that "what is one man's meat is another man's poison," and that a well man should be fed according to his needs and capacity. Although science is employed in the feeding of other animals, and the law is recognized that for the thoroughbred, the hackney, and the draught-horse the diet should be different, in order to develop and retain the highest capacities of each in speed, endurance, and strength, yet in the case of man, except in athletic training, no law is taught or obeyed. The judge, the clerk, the tailor, the laborer, each requires a different regimen suited to his special needs and habits; in eating, each man should be guided by his hereditary peculiarities, and by his congenital or acquired defects in digestion, and at certain periods in a man's life the food-list should be altered. If we wish to get the highest efficiency from a man in his intellectual or physical life, and to avoid that inevitable breakdown that comes sooner or later to every man who does not regulate his diet according to his age, habits as to exercise, mental work, and digestive activities, we must adapt his food to these conditions. How many men with a gouty tendency live on a gout-inducing diet? How many who need nitrogenous food live on starch and sugar? Medical science and authority should speak on this subject, and instruct a very ignorant and careless world.

The curative treatment must be based upon the fact that intestinal digestion is relatively less perfect than gastric digestion; that the liver must not be overcharged with the results of nitrogenous excess; that fermentation in the intestines must be avoided or relieved, and that prolonged retention of waste matters does harm. Hence the diet should consist of the lighter and more digestible forms of albuminoid food. The temptation is to the reverse of this, and to meet weakness by increasing meat diet and giving raw beef, beef-tea, etc. But beef, mutton, and eggs should be avoided as far as possible, and fresh or salt fish (which recent observation has shown

to be more digestible than fresh fish), oysters, sweetbreads, the white meat of chicken, turkey, and game are to be advised. In regard to vegetables, those that contain the least amount of starch are the best. Lettuce, celery, spinach, onions, raw tomatoes are to be preferred to potatoes, rice, or macaroni. Bread is to be limited in quantity. All farinaceous foods, as oatmeal, grits, granum, tapioca, corn-starch, are bad because they are chiefly digested in the intestine. Fruits, orange juice, grapes, baked apples are agreeable, and not harmful. Gelatin preparations can be given for the same reason.

In regard to milk, there is no definite rule to be laid down; with some it is a typical food; with others it never agrees. But if milk is taken, it should not be used at the regular meals. Being liquid, it is swallowed without appetite, and either its agreeable taste or the idea that it is very nutritious and strengthening induces patients to drink it in considerable quantity. Thus, a supplemental liquid food that is not needed, and that requires digestion, is put into the stomach, increasing its work. Besides, if the digestion is not quickly done, milk easily undergoes fermentation, and this, our most dreaded enemy, enters into action. As a substitute for other foods, as a between-meal food, when only small quantities can be taken at the regular meals, milk, either plain or peptonized, is a valuable addition. Fats are to be cut off when the intestine performs its work imperfectly.

Alcohol in any shape or form is injurious. Sir William Roberts has shown that sherry, claret, port, and hock, in the small proportions of 1 per cent., have been found to paralyze saliva almost completely. While brandy or whiskey do not retard gastric digestion, wines do, and to an extent out of proportion to the small amount of alcohol contained in them. The same is true of malt liquors. But what has a more important bearing on the subject of this paper is the effect of alcohol on pancreatic (intestinal) digestion. In regard to the effect of wines and beer on the digestion of starch, it is found that their retarding influence is entirely due to their acidity, and that as this is neutralized by the bile entering the duodenum, wines are without injurious influence on starch-digestion. Tryptic digestion is only delayed by alcohol in high dosage; in the quantities and proportions in which alcohol is usually taken at meal-time, the absorption of alcohol by the stomach is so rapid that but a small quantity would reach the duodenum, and hence but little injury would follow its use.

There are two serious objections, however, to the use of alcohol in any form and in any quantity in intestinal indigestion; one is that with alcoholic local and general stimulation, more food, especially proteid food, is taken than there is need for; the second objection is that alcohol stimulates cardiac action, induces rapid portal circulation and hepatic congestion, diminishes the resistance of liver parenchyma, and brings about the serious results of interstitial change.

According to Roberts, coffee has less inhibitory effect on salivary digestion than tea, which is a powerful retarder of salivary digestion, on account of the large proportion of tannin that it contains. Both tea and coffee delay stomach digestion, but they have no effect whatever on pancreatic digestion. Hence, it may be concluded that the morning cup of coffee, not too strongly infused, may be permitted to one who is accustomed to it, or that weak tea is not hurtful, and is to be preferred as a drink to hot water, both on account of its pleasanter taste and slightly stimulating effect.

The effervescent table-waters rather aid than delay digestion, and if wines are taken the waters neutralize some of the injurious effects of wines, especially as regard their effect on the digestion of starch.

While the various aids to digestion often fail to secure positive results, yet they should be given. As our object is principally to aid pancreatic digestion, we are concerned more with the methods that bring this about. The objections to giving pancreatin after a meal are so obvious that few have much faith in its efficacy; even a short stay in the stomach on its way to the duodenum will expose it to the action of the acid of the gastric juice, and its activity as a ferment be destroyed. Roberts has suggested a plan for giving it that obviates these objections; his method is to add pancreatic extract to food fifteen or twenty minutes before it is eaten. "Certain dishes, as farinaceous gruels, milk, bread and milk, milk flavored with tea or coffee, or cocoa and soups strengthened with farinaceous matters or with milk, are suitable for this mode of treatment. A teaspoonful or two of the liquor pancreaticus should be stirred up with the warm food as soon as it comes to the table; and such is the activity of the preparation that even as the invalid is engaged in eating, . . . a change comes over the contents of the cup or basin, the gruel becomes thinner, the milk alters a shade in color, or perhaps curdles softly, and the pieces of bread soften. The transformation thus begun goes on for a time in the stomach, and we may believe that before the gastric acid puts a stop to the process, the work of digestion is already far advanced."[1] This method, if successful, would remove, in part, the objections that I have urged to the use of farinaceous foods. In feeble or delayed gastric digestion, pepsin and dilute hydrochloric acid, given after food, must always constitute one of our resources.

All these rules are intended to prevent decompo-

[1] Roberts: Digestion and Diet, 1891, p. 217.

sition and the development of toxic agents in the intestines, but for some time, at least, the evil will continue, and means must be used to render those products harmless, and to eliminate them. The first object is reached by disinfection of the gastro-intestinal canal by means of thymol, salol, naphthol, salicylate of bismuth, etc., the drug to be given before eating, but not within one hour and a half after. Theoretically this is the right treatment, but how far we succeed in carrying it out is a matter of doubt, as the drug has to pass unaltered through the stomach and pylorus into the duodenum.

Elimination is practised by avoiding delay in the intestine and favoring the daily evacuation of the colon. The practice is certainly an old one, and the guide to it has been the reiterated statements of patients that without the daily evacuation bad feelings were inevitable; and they continued to believe this notwithstanding our assertion that moderate constipation did no harm, and that purgatives did a good deal. Now it looks as if they were right, and we were wrong. Delay anywhere in the large intestines means the opportunity for continuing decomposition and absorption of matters unfit for nutrition or injurious to the system. Means, therefore, that favor a rapid transit from cecum to rectum, and that cause the rectum to be emptied daily, must be employed. Cathartics are the last remedies to be advised if the result can be brought about in any other way; a proper diet, change in the habits of life, exercise, and colon massage may accomplish this. If they do not, a small enema of cool water containing some antiseptic, or a mild laxative pill will have to be given. In the choice of a laxative, it does not make much difference what one is selected. Hydragogue cathartics, as Hunyadi and other mineral waters, and drastics, are wrong in every way. A "peristaltic persuader" is best, and the minimum dose that will produce the effect is the one to be prescribed. Electricity has been employed, and is highly recommended; it is used as an excitant to muscular action, and, if properly given, in accordance with the laws of electrical action, it may render great service.

When the toxic products have entered the system, their elimination is favored by diaphoresis, diuresis, and by the inhalation of compressed air or oxygen. Hence arise the benefits of exercise or bathing, friction and general massage, the free drinking of pure water, as Poland water, or some harmless mineral water, as the Lithia waters, the virtues of which depend, in very small part, upon the mineral matters that they contain. In case of muddy skin, with acne, sluggish circulation, cold hands and feet, when there is constipation and a urine dense and loaded with urates and with increased urea, oxygen inhalations would promise a great deal of benefit.

In regard to other drugs, tonics are bad; iron is the worst, and only in those forms in which anemia does not disappear with the improvement in digestion should the more assimilable and least irritating forms be given, as the lactate and pyrophosphate. Bitter tonics are inadvisable; the most they can do is to stimulate the gastric mucous membrane, increase secretion, and it is questionable whether more harm than good is not done by trying to bring this about. Cod-liver oil is objectionable, for the reasons given, and yet in just such cases it is frequently given on "general principles."

The attempt has been made in this paper to discuss the nature and cause of symptoms that we are constantly meeting in our daily practice, and that when we attempt to cure them prove so troublesome to us. There may be many different opinions formed when such a case presents itself for examination, but a comprehensive study of *all* of the symptoms, and an effort to look upon them as closely related and as together forming *one* disease, will help one to arrive at a rational view as to the treatment that should be pursued.

Intestinal chemistry points out to us a probable cause of most of the symptoms, and gives indications for treatment that are of the highest value. But I do not believe that there is any name hitherto applied to this diseased state that expresses the nature, or that is comprehensive enough to include in its meaning its essential features; for while toxemia, lithemia, intestinal indigestion, constipation, functional diseases of the liver, neurasthenia, hypochondriasis, may all be present in any one case, there is not one of these terms that is satisfactory or acceptable. .

A FURTHER REPORT ON THE TREATMENT OF TUBERCULOSIS BY IODOFORM INUNCTIONS.

BY LAWRENCE F. FLICK, M D.,
OF PHILADELPHIA.

IN a paper read before the Philadelphia County Medical Society on November 12, 1890,[1] I made the statement that I had obtained some striking results in the treatment of tuberculosis by inunctions with a solution of iodoform in oil. On April 22, 1891, I presented to the Philadelphia County Medical Society a number of cases treated by this method, and gave a detailed account of some others.[2] As it is now nearly two years since I first began experimenting with this method of treatment, I not only feel justified in making a further report on it, but

[1] This paper was published in THE MEDICAL NEWS of November 15, 1890, and in the Transactions of the Philadelphia County Medical Society for the year 1890.

[2] This paper appears in the Transactions of the Philadelphia County Medical Society for 1891.

in a measure feel obligated to give the profession my more mature experience with it.

Before saying anything as to whether my first conclusions have been borne out by further experience, I will give a short synopsis of the cases I then reported, together with an account of them up to date, and will relate a few cases that I have treated by the method since :

CASE I.—Female, twenty-six years of age. At the time of last report she had had tuberculosis about two years ; had been under treatment with iodoform inunctions about six months ; was almost entirely well, having still a slight impairment of resonance over the right apex, and was gaining flesh at the rate of a pound a week. The case continued to do well, and all symptoms of tuberculosis disappeared. Later on she had an acute attack of insanity, from which she likewise recovered. I have not seen her recently, but a member of her family has informed me that she is entirely well.

CASE II.—Boy, twelve years of age. At the time of last report he had shown symptoms of tuberculosis for about nine months ; had been under treatment with iodoform inunctions about six months, and was to all appearances entirely well. I have seen the boy within a few days, and he continues to be entirely well, although since last report he has had a hemorrhage, and has had to resume the treatment. He is now using the treatment at intervals as a precautionary measure, as he is very much exposed to reinfection, there being two other cases in his family.

CASE III.—Sister of Case II. ; twenty-four years of age. At the time of last report she had been tuberculous about a year ; was in the third stage of the disease ; had been under treatment with iodoform inunctions and internal use of creasote in large doses for about six months or more, and was at the time of report suffering a relapse, after having been nearly well. This case is at present in comparatively good condition ; the disease for the time being is arrested, although she has gone through one or two severe exacerbations since last report. She has given up all treatment except the iodoform inunctions, which she practises faithfully every day. She is now performing the duties of housekeeper for her three brothers, all of whom have been or are now tuberculous. She coughs very little, eats well, looks well, but inasmuch as she has cavities, she may at any time reinoculate herself, and may have an extension of the disease.

CASE IV.—Male, twenty-three years of age. At the time of last report he had been tuberculous about a year; had made great progress toward recovery under iodoform inunctions and large doses of creasote internally; had gained about twenty pounds in weight; was laboring under a recrudescence of the disease, started up by an attack of influenza. He again recovered from the acute symptoms, and promised fair to do well, when in November, 1891, while out driving, he was taken with a severe hemorrhage, which was repeated a number of times, and from which he died in a few days.

CASE V.—Male, twenty-four years of age. At time of report had been tuberculous about two years ; was in the third stage of the disease ; had improved very much under treatment by inunction and large doses of creasote internally ; had gained thirteen pounds in weight, and was enjoying comparatively good health. This case gave up treatment, and has not been under my care since.

CASE VI.—Male, twenty-six years of age. At time of last report had been tuberculous about five years ; was in the third stage of the disease ; had improved very much under treatment by inunctions of iodoform and the use of large doses of creasote internally ; was in bed at the time with acute symptoms which had apparently been precipitated by a trip to Florida. This case continued to grow worse, and died in September, 1891.

CASE VII.—Female, twenty-two years of age. At time of last report had been tuberculous about two years ; was in the third stage of the disease ; had much improved under the treatment by inunctions and the use of creasote internally ; had gained twenty pounds in weight ; was at the time suffering from a recrudescence of the disease, which had been set up by an attack of influenza, and was in a bad condition. This case grew rapidly worse, and died shortly afterward.

CASE VIII.—Male, thirty years of age. At the time of last report had had tuberculosis for about four years ; was in the third stage of the disease ; had cavities in both lungs ; had been under treatment with iodoform inunctions and the use of large doses of creasote internally for about six months ; had had the disease arrested, and had gained much in weight ; was coughing very little, and was rapidly gaining strength. This case continued to do well, and gained so much in health and strength that he, on his own responsibility, decided to go to Denver to start in business. During the first few days of his stay in Denver, whilst working hard to get started in business, he had a hemorrhage, from which he died.

CASE IX.—Female, twenty-three years of age. Had been tuberculous about three months ; was in the first stage ; at the time of last report had been under treatment with inunctions of iodoform for about two months ; was much improved, and had gained six pounds in weight. This case got entirely well, and is well at the present time. She has been and is now engaged in housekeeping.

CASE X.—Male, fifty-five years of age. At the time of last report had been tuberculous about six or eight months ; had been under treatment with inunctions of iodoform two months ; had gained four pounds in weight, and was in fairly good condition. This case continued to do well, but subsequently disappeared from observation.

Some of the new cases that I have treated by thi method are as follows :

CASE XI.—Male, twenty-five years of age ; in good circumstances, a cigar-dealer. Has been tuberculous about two years. Is physically a well-developed man ; father and mother are living and well. For

some years has been much in the company of a young lady who was consumptive, and who has recently died. Began treatment with iodoform inunctions in the latter part of 1890, but when somewhat better discontinued it. Again began the inunctions in April, 1891, and continued them until all symptoms disappeared. At present is following his business, and to all appearances is well.

CASE XII.—Female, eighteen years of age; a store-girl, living comfortably; came to me first for treatment in March, 1891. At that time had enlarged lymphatic glands of the neck, which had been enlarging for about three months; was coughing a good deal, had been losing flesh rapidly for some time, had a pulse of 104, and a temperature of 99⅕°, and had impairment of resonance over the right apex. I put her on iodoform inunctions, had her rub an ointment of iodide of lead into the enlarged glands, and gave her tonics internally. She rapidly improved, and after two months' treatment the glands had materially diminished in size, her temperature was normal, pulse was 76, lung had cleared up, cough had disappeared, and her general condition was good. The girl is at present following her usual avocation, apparently well.

CASE XIII.—Male, about twenty-five years of age; came to me for treatment in the latter part of June, 1891. Had then been in bad health three or four years, had had a cough for a year or more, had had syphilis two years previously, had had what he termed pneumonia six months before, at which time he spat blood, and was generally in a very bad condition. His temperature was 101⅖°, and his pulse 108. There was increased expiratory murmur over the entire right lung and over the upper part of left. There were spots of dulness over both lungs. He had lost about twenty-five pounds in weight. I put him on inunctions of iodoform and gave him a tonic internally. Upon learning his condition he concluded to go South, where his people lived, and I have not seen him since. On December 10, 1891, six months afterward, I received a letter from him, in which he wrote: "Dear Sir: About the 1st of last July you prescribed an ointment for me to rub with, which had oil and iodoform for some of its ingredients. I was suffering at the time from pulmonary troubles. It benefited me a great deal. I have since lost the prescription, and, my lungs giving me again trouble, would like to use it. Please be kind enough to send me a duplicate prescription by return mail, as I am anxious to commence it at once."

CASE XIV.—Female, twenty-seven years of age; a store-girl, in good circumstances, with no history of tuberculosis. Came to me first in the beginning of September, 1891. She had then been sick several months, and had lost twenty pounds in weight. Tuberculous deposit and some breaking down in the right apex. I placed her on tonic treatment and creasote internally, and inunctions of iodoform. She improved very rapidly, at the end of a month had gained about seven pounds in weight, and said she felt like herself again. I did not see her again until January, 1892, when she returned, saying that she had been right well, but that owing to the disagreeable smell of the iodoform she had discontinued the treatment too soon, and that having grown worse she would like to take it up again. She is now rapidly improving under treatment by inunction.

CASE XV.—Female, forty-seven years of age; married; housekeeper, in humble circumstances; came to the out-patient department of the Rush Hospital for Consumption and Allied Diseases, on March 14, 1891. The record there states that her father and one brother had died of consumption; that she had pneumonia two years previously; that she had not felt well since, and that she had been coughing and spitting a good deal recently. Physical examination showed loud, whistling râles, prolonged expiratory murmur over the right apex, and impairment of resonance on the same side above the clavicle in front and above the ridge of the scapula behind. Her pulse was 80, her temperature 98⅘°, her appetite good, tongue large and somewhat coated, heart-sounds normal, throat congested, bowels regular. She stated that she had been losing flesh rapidly. I gave her hydrochloric acid internally, and put her on inunctions of iodoform. She has kept up the inunctions with scarcely any intermission until the present time, and has had practically no other treatment except a tonic. She has gained about eleven pounds in weight, her cough is entirely gone, she has not expectorated for some months, and all physical signs showing an abnormal condition of the lungs have disappeared.

In addition to the cases just related I have treated a number of others by this method, of some of which, however, I did not keep notes; some I was unable to keep under observation long enough to make them of any value; and in a few the diagnosis was so doubtful that I do not feel justified in quoting them. The fifteen cases which I record in this paper, with possibly the exception of Case XV, were, I think, all cases of tuberculosis.

Of the ten cases which I reported before, four have died, three are at present apparently well, one is enjoying comparatively good health, and two have disappeared from under my observation. The four cases that died were all far advanced in the third stage of the disease when the treatment by inunction was begun; all received large doses of creasote in addition to the inunctions; all had done well under the treatment for awhile, having gained from seven to twenty pounds in weight; two died from hemorrhage; in two the recrudescence of the disease was due to influenza. Of the three cases that are at present well, all were in the first stage of the disease, and none had probably advanced beyond this stage. The one case that is now in comfortable condition was in the third stage when the treatment was begun, but had at that time in all probability but little breaking down. The two cases that have disappeared from under my observation were both in the third stage when treatment was begun, were

both doing fairly well, but evidently became discouraged, and went elsewhere.

Of the five new cases here reported, three are in the third stage, and two are probably in the first stage. The two in the first stage are both apparently getting well, although sufficient time has not yet elapsed to determine that. Of the other three cases one promises fairly to recover, as there has been but very little breaking down, and the other two, whilst much better and still improving, will likely follow the course of those reported in my former paper.

As will be evident from the cases here reported, the conclusions reached in my former paper, read before the Philadelphia County Medical Society last April, have been borne out by my further experience. Iodoform will cure tuberculosis in the first stage, and it acts better when administered by inunctions than when given by the mouth. When the disease has advanced to the second or third stage iodoform may do good, but can no longer be depended upon as a curative agent. As I stated in my former paper, creasote should then be given together with iodoform, and given in large doses. If given diluted with hot water, as much as fifteen drops can be taken with comfort. It seems to me, indeed, that creasote is the drug to be relied upon in the second and third stages of the disease. I, however, use the iodoform inunctions in this stage for the reason that the tuberculous nodules in a given case do not all break down at the same time, and that whilst some nodules may be broken down, or have already broken down, there may be many that are still in the first stage.

Along with specific treatment I always use tonics and forced nutrition. Much of the success that I ascribe to specific treatment may of course be due to the tonic and nutrient treatment, but I am bound to say that my results with iodoform inunctions and creasote together with tonic and nutrient treatment are much better than they were before I used the inunctions.

INJURIES OF THE FOOT.[1]

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WHEN the foot is subjected to a traumatism adequate to cause a fracture, there is usually sufficient injury to the soft part to constitute a compound fracture. Viewed from a mechanical standpoint, the foot is a double arch for support and motion, consisting of a few bones held in place by ligaments, and the fascia plantaris, which arises from the os calcis, extending forward into slips and attached to the metatarsal bones and the phalanges.

[1] Read at the Cuyahoga County Medical Society, November 5, 1891.

The integrity of the arch depends upon the integrity of the ligaments and fascia. Mechanically, the foot is a lever of the second class, the tibia the load, the tendo Achillis the power, and the anterior extremity of the arch—the metatarsal bones—the fulcrum. In adjusting artificial feet these simple principles in mechanics are observed.

Fractures of the foot are usually compound, often multiple. The cause is usually a crushing traumatism, as by a heavy piece of iron, powerful machinery, or the wheel of a railway carriage.

The diagnosis, with probably a few exceptions, rests on the usual symptoms of fracture. Frequently there is a "sprain fracture" of the astragalus, which gives no positive symptom of such lesion, and often cannot be detected except upon the operating-table or in the dead-house. I have several times found a comminuted fracture of the head of the second metatarsal bone, when no such fracture was indicated by the ordinary rules of diagnosis. The reason for this exception is apparent when the peculiar position of the bone is taken into consideration. Its head is held as in a vice immovable in a mortised depression, on its internal side, by the internal cuneiform, the posterior by the middle cuneiform, the external by the external cuneiform. Being thus wedged in, when subjected to a traumatism it will break, because its position is uncompromising, receiving the force much augmented by high leverage, thus causing a fracture which without this peculiar mechanical disadvantage would not occur.

When the violence is lateral the tension on the head will be tenfold greater than the force applied, by reason of the propinquity of the fulcrum and the load and the length of the lever. Moreover, this fracture will rarely disclose its presence by crepitus or deformity, even though it be multiple. In making a prognosis of a severe contusion of the anterior part of the foot, the probability of such fracture is to be well borne in mind. Fortunately, the function of this bone is not *per se* important.

Fracture of the toes is readily discovered—the treatment simple, the prognosis good. Even a multiple fracture is promising. I have frequently seen compound comminuted fractures of the toes readily unite. The treatment is simple, and in the event of a compound fracture the result is almost entirely dependent on the success or failure in attainining asepsis. As to splints, none are needed. Each toe should receive a bandage of gauze closely applied, the plantar surface of the toes being packed with antiseptic gauze, until by the ordinary pressure of the bandage the gauze will sufficiently support the fragments. The dorsal surface is likewise padded, so that the plantar and dorsal surfaces at every point will receive an equal pressure. If fracture be compound, the blood that will ooze into the bandage will

materially improve this soft splint. No splint has been devised that yields better results than this method. Unyielding splinting will tend to cause deformity. In fracture of the metatarsals, reduction, closely applied bandage, selective padding, elevation, with ordinary means of combating inflammation, will succeed. If the bones are comminuted and displaced, resection may be performed at any point, regardless of articulations. This, however, will rarely be necessary. Fractures of the tarsus are usually compound and comminuted. Even then there is considerable hope of preserving the foot, especially if the arch is not wholly destroyed. Close bandaging, elevation, rest, antiseptic dressings, are required. Simple plaster-of-Paris bandage is the best. Absolute rest of the foot must be secured, leaving it in the normal position of repose. It is well to bandage the leg, to keep the muscles at rest. The astragalus is most frequently fractured, usually from transmitted violence.

If the fracture be compound, and the fragments cannot be replaced, excision may be practised. I have treated several fractures of the astragalus. In one case a machinist fell some distance, striking on his feet. He was unable to step on his foot, and suffered intense pain. The line of fracture was antero-posterior, the internal fragment being displaced. The fragment was replaced with considerable difficulty by direct pressure with one hand, slowly moving the foot to and fro with the other. There was a tendency to eversion. Adhesive straps were applied over the fragment, and extending three-fourths the circumference of the foot. A pad of gauze was placed over the adhesive, and held in place by a closely applied bandage. A basswood splint was applied to the inner side of the foot to prevent eversion. Inflammation was combated by packing the foot and ankle in ice, and keeping them at rest in an elevated position. The ankle was limited to one-fourth of its normal motion after two months. In four months, by systematic massage and passive motion, more than half of its function was restored. In another case, fracture of the astragalus was caused by a fall from a freight car, striking with the foot upon a steel rail. The fracture was simple, displacement slight, yet the amount of callus thrown out was extensive, causing almost an entire loss of function of the ankle-joint for more than a year. Almost two years have now elapsed; the callus is wearing away with time, and the foot is becoming more useful. In treating fractures of the os calcis, the greatest difficulty presented is to overcome the tendency to displacement by the traction of the tendo Achillis. Although I have never employed it, subcutaneous tenotomy strongly recommends itself as an adjuvant in the maintenance of apposition.

Lacerations and contusions present no features that cannot be treated on general principles. When the foot is lacerated, it has been my custom not to spare soap and brush. After cleansing I immerse the part for five minutes in a bichloride solution. The application of antiseptic dressings, with elevation and rest, insures primary union in the vast majority of cases. Punctured wounds of the sole of the foot often require especial attention, by reason of the tendency of closure of the aperture of entrance of the wounding substance. In my opinion every punctured wound of the foot should, as a routine practice, be amplified by a free incision, and a search made for any foreign substance that may have lodged therein. After irrigating with a strong antiseptic solution, if any further doubt remains as to the asepsis of the wound, I drain it, and apply a moist antiseptic dressing. In any case, at any time, if there arise local elevation of temperature and throbbing pain, free incision must be immediately made. The consequence of neglected or maltreated punctured wounds of the sole of the foot are only too well known to require mention here. There is another class of injuries that often present difficulties. I refer to that class in which some constitutional disease or dyscrasia exists, that presents a culture soil for surgical microörganisms. A slight wound, probably only a contusion, will make a point of least resistance, and a pathologic process far-reaching and disastrous will speedily follow. Constitutional treatment is important. If there is extensive loss of the soft parts a tedious recovery is unnecessary, if the wound is in a healthy condition. In these cases skin-grafting will very rapidly close the wound. I have recently grafted by Thiersch's method with most gratifying results. The patient had suffered a comminution of the bones and the soft parts of his foot by the fall upon it of an iron bucket weighing a ton. The second metatarsal bone and the corresponding toe were amputated. The remainder of the mangled foot was placed in a warm, moist, antiseptic dressing. The integument suffered molecular death, leaving the half of the dorsum of the foot without integumental covering. At the end of two weeks the entire surface was clean. This surface, after cutting away the granulations, was covered with strips of integument taken from the patient's arm in strips about three-fourths of an inch wide and two inches long, their margins being placed in close linear coaptation. The wound was dressed with plain sterilized gauze and absorbent cotton. The dressings were kept warm and moist with a solution of boric acid, and changed in four days. The grafts all grew, and in two weeks the integument transplanted was strong enough to allow the patient to walk about with safety. Where the grafts had been placed there was a depression of half

an inch below the surface of the surrounding skin. This rapidly filled up. During the course of treatment of this wound, with extensive denuded surface, there was no pus nor any pain. I did not find it necessary to anesthetize the patient to cut the grafts, as they were made very thin, scarcely causing capillary hemorrhage. The grafts are said to grow best when transplanted in the same direction on the limb as they were *in situ*.

Consistent with a healthy stump when amputation of the foot is indicated at a point beyond the tarsus, every possible atom should be saved. On the contrary, unless the risks to life are too much augmented when amputation on the proximal side of the tarso-metatarsal articulation is indicated, the whole foot should be sacrificed and amputation of the lower third of the leg be practised, that the unfortunate victim may be duly and truly prepared for an artificial limb.

Manufacturers of artificial limbs are almost unanimous in their disapproval of the tibio-tarsal and tarsal amputations. Experience has taught them that the difficulties encountered in making a useful substitute for a part of the foot are only equalled by the painful disappointment of the unfortunate victim. The mechanical reasons for this difficulty are apparent when we consider the anatomy of the foot.

In all of these operations—Chopart's, Hey's, Lisfranc's, Forbes's, Ligneroille's, Pirogoff's, etc.—you leave a foot that has no value except to carry weight. In the Chopart, Forbes, Hey, or Lisfranc amputations the os calcis remains. The flexor tendons are severed, the extensors remain. There will be a contraction of the gastrocnemius and soleus muscles, with consequent drawing downward of the extremity of the stump, causing pressure on a usually very sensitive cicatrix. In the various other operations, as those of Pirogoff, Le Fort, Guenther, etc., there is insufficient space left for the mechanism of an artificial joint. However, Syme's operation is probably the best that can be performed below the lower third. If the stump can bear pressure, a fairly useful member may be made. All these operations usually leave worse than useless appendages—as an endless source of annoyance to the instrument-maker, torture to the patient, and regrets to the surgeon. The argument of greater mortality against operations on the lower third of the leg has lost weight since the introduction of modern antiseptic surgery. The relative mortality given in statistics is not a fair comparison, as the tables are drawn from an era of surgery in which these operations were performed in preference to the leg operation, so that the cases of this amputation were drawn from injuries much more extensive and serious. I am unwilling to admit that the mortality of operations upon the lower third of the leg, practised on healthy limbs, will be any greater than that of the complicated tarsal and tibio-tarsal amputations.

In amputation of the leg the cicatrix should be made to lie on one side, preferably the posterior side of the stump.

In advocating the abandonment of operations that bear the name of renowned surgeons; that have been taught and practised for generations; and that have occupied a prominent place in the best surgical literature through numerous editions, I wish to remind that the wonderful advances in prothetic science, and the decreased mortality of major amputations through aseptic surgery, are factors that unfortunately were unknown to the older surgeons, else the illustrious name of Chopart would not bring to every surgeon's mind visions of suffering cripples. I fully appreciate that the highest type of surgery is produced by conservative surgeons; but I oppose that conservatism which prevents a patient from obtaining relief from his misfortune by rendering the stump unfit for the application of an artificial limb.

In order to facilitate discussion, I submit the following propositions:

1st. That in open wounds asepsis is attained, if at all, more certainly through the employment of antiseptics.

2d. That unyielding splintings are not indicated in treating fractures of the toes. That the head of the second metatarsal bone is especially liable to suffer comminuted fracture.

3d. That in compound, even comminuted fractures of the tarsus, if in doubt as to the propriety of attempting to save the member, apply moist, warm antiseptic dressings, and await further indications. Suppuration should be the exception, if the case be well managed.

4th. Ordinarily, amputations between the junction of the lower and middle thirds of the leg and the tarso-metatarsal articulation should not be made. At all other points, save all possible.

CLINICAL MEMORANDA.

CAMPHORIC ACID FOR THE NIGHT-SWEATS OF PULMONARY TUBERCULOSIS.

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PROBABLY there is nothing so unpleasant or aggravating in tuberculous patients as the profuse sweating that occurs either in the morning or during the entire night. The depression following it does not seem to be due to the sweating itself, but rather to the effects of a

gradual increase in the quantity of carbonic acid gas in the blood, incident to the difficult interchange of gases in consequence of the pulmonary affection. It is well known that in normal respiration the blood does not contain so continuously a high percentage of carbonic acid gas as will cause a less sensitive condition of the centers governing respiration. But in pulmonary tuberculosis, when the energy used in the daily exertions, from excessive coughing or other physical causes, more than exceeds the supply of energy and nutrition that can be furnished by the body, the respiratory centers are greatly depressed, and are not stimulated so quickly by a percentage of carbonic acid gas that normally would affect those centers. The centers presiding over the functions of the sweat-glands, not being affected by the physical causes, respond to the increased stimulation, and pour forth their secretion abundantly. The proper therapeutic mode of combating this functional perversion would seem to be to use such a drug as shall stimulate the respiratory centers, and thereby cause the elimination from the blood of more carbonic acid gas, and in this indirect manner act as an anhidrotic.

Camphoric acid seems to effect this object with less derangement and more satisfactory and lasting results than any other drug. This remedy is best given in doses of twenty grains from four to six hours before the period of sweating is expected. The best method of administration is dry on the tongue, and washed down with a little water. The taste of the drug is not unpleasant; neither does it produce the gastric irritation so frequently experienced with many medicinal agents used under like conditions.

During the last six months I have used it in a large number of cases,[1] with the very best results. That an idea may be had of how it has acted, the following are the brief histories of some of the severe cases in which it has had the most prompt effect.

Case No. 441, a minstrel, twenty-five years of age, had a chancre two years previously. Physical examination demonstrated a well-marked interstitial pneumonia of the larger part of both lungs. His condition was very good. He complained of the usual symptoms of the disease, but had no sweating. The patient grew slowly worse during the next month, at the end of which time the bacilli of tuberculosis were found in the sputum. Exactly one month after the first examination, he was suddenly taken with profuse cold sweatings about 3 A. M. Camphoric acid (20 grains) was ordered and given about 11 P. M. The sweating did not take place the next morning, nor on the day following, but on the third morning it again appeared. The drug was administered every other night, from four to six hours before the expected time of sweating. But three doses were given. From the time of the first sweating symptoms of tuberculosis began to appear. These continued to increase, and were followed by death two months later. One week before death dry pleuritis occurred. No sweating took place after the third dose of camphoric acic, sixty-two days before death, although the patient was greatly emaciated and very weak. The autopsy showed syphilitic thickening of the connective-tissue structures, well-marked pulmonary tuberculosis, and recent pleurisy.

Case No. 709 was a stonecutter, about fifty years of age. The entire right lung was badly affected. Bacilli were found in the sputum in large quantities. Pulmonary disease existed, complicated with tuberculous enlargement of the cervical, axillary, and, in fact, all of the glands on the right side above the diaphragm accessible to examination. These glands grew to enormous dimensions, and were at times painful. The patient's general condition was so very bad that he was placed in the hospital. Under better regimen he greatly improved. In this case the sweating and following depression were marked. Several drugs were tried, but discontinued for different reasons. Camphoric acid controlled the sweating better than any. It had to be continued for several days before a lasting impression was made. The man continued to grow worse, and two months after first seen was taken home, and died shortly afterward. No autopsy was made.

Case No. 446 was a wood-engraver, twenty-one years of age. He presented all the symptoms of pulmonary tuberculosis of some standing. Bacilli were found in the sputum. He complained severely of weakness from profuse sweating. Little benefit was received from the administration of several different drugs for three weeks. Finally, 20 grains of camphoric acid were given. Only two doses were necessary. He had had no recurrence of the sweats for four months afterward.

Case No. 485 was a cigarmaker, thirty-four years of age. There were the physical signs of tuberculous affection of both apices, with the symptoms typical of that condition. Bacilli were found in the sputum. One week after first seeing the patient, he was suddenly seized with an attack of acute diffuse nephritis, which almost resulted in death. In a few weeks he improved, but he still had a chronic affection of the kidneys. He has had several severe attacks of sweating during the last four months. Two doses of camphoric acid were always sufficient to give him relief for at least a week. His condition at the present is very good for one with chronic nephritis and pulmonary tuberculosis.

Case No. 757 was a stonecutter, fifty years of age. In the course of his illness—chronic fibroid "phthisis"—he was troubled for several weeks with profuse sweating, but after giving camphoric acid in slightly increased doses for two nights the sweating did not appear for several weeks.

Case No. 700 was by trade a printer, thirty-nine years of age. This case is similar to No. 441 in having begun as a syphilitic induration of the pulmonary tissues, followed by a chronic tuberculous process. He suffered for several months with recurring periods in which he seemed more prone to severe night-sweats. Treatment, as pursued in the other cases, gave him immediate and lasting relief.

Case No. 704 was a barber, thirty-five years of age. Both apices were affected, and bacilli were found—an undoubted case of pulmonary tuberculosis. One dose of the acid stopped the sweating, which did not return for several weeks, although the man did not improve materially.

Case No. 670 was twenty-three years old, with chronic pulmonary tuberculosis. Sleep was impossible on ac-

[1] At Prof. W. H. Porter's clinic on general medicine, New York Post-Graduate Medical School and Hospital.

count of profuse sweats. One dose gave the relief desired.

Case No. 702 was a tailor, forty-eight years of age, with chronic pulmonary tuberculosis, complicated by repeated nasal hemorrhages, which were followed by periods of great sweating. Good nutrition and several doses of the acid gave relief.

Case No. 707, thirty-two years of age, had an acute attack of pulmonary tuberculosis, from which he seemed to partly recover. He complained a great deal of sweating and of dyspnea. Examination revealed a chronic pulmonary tuberculosis, involving the larger part of the right apex. Bacilli were found in the sputum. His sweats at times used to last all night. After this condition was ameliorated by the use of camphoric acid, he was greatly improved. Unlike the other cases, the sweats did not stop at once, but gradually became less and less, until they finally disappeared.

It will be noticed from the foregoing reports that only a very few doses were required to give prompt, and in many cases lasting, relief. After taking the camphoric acid all of the patients were able to sleep better, and on awakening, felt stronger and refreshed.

ENDOCARDITIS OF THE AURICLE AND RUPTURE OF THE CHORDÆ TENDINEÆ OF THE MITRAL VALVE.

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THE subject of this note was a man about forty-five years of age, whose history is very brief and incomplete on account of his condition at the only time he was seen in life by the writer.

The essential points are these: He was a laborer, given somewhat to drink, subject to exposure, etc., an occupant of one of Seattle's lowest ten-cent lodging-houses. About eight years ago he had an attack of acute inflammatory rheumatism. He was sent to the King County Poor-farm, with a diagnosis of pneumonia.

The patient had a subnormal temperature; cold, livid extremities; a pulse rapid, very weak, irregular; and, at times, no pulsations could be detected in the radials; though, by stethoscopic examination, the heart was found to be beating. The vessels, both arteries and veins, at the base of the neck, pulsated freely. Respiration was rapid and shallow. Inspection showed a diffuse, undulating pulsation over the precordia, with the apex an inch outside of the nipple line and in the upper portion of the sixth interspace. No thrill could be found on palpation, and percussion showed a quadrate viscus. On making a stethoscopic examination, with the first sound a loud, rough murmur was heard, which could be traced into the axilla and back, and was well heard over the right lung. Just preceding the first sound and murmur was a second murmur, which, though presystolic in time, gave none of the usual characteristics of a presystolic murmur; and I am at a loss how to describe the sound. It was not soft, nor was it a squeak. It was very short. No symptoms of disease of other organs appeared.

In a few hours after I saw him he died; the section was made sixteen hours after death.

The cranium was not opened on account of darkness and lack of time. The large veins of the chest were engorged with dark, semi-clotted blood, and all four cavities of the heart were filled with the same material. The organ was large, quadrate, dilated, and the muscular tissue was soft and flabby; while there was general thickening of all the walls, except that of the right auricle. The thickening was especially noticeable in the left ventricle and auricle. No lesions were found on the right side.

Upon opening the left auricle a patch of old endocarditis was found, commencing at the free edge of the posterior leaflet of the mitral, and extending to near the top of the auricle, measuring over two inches in length. It was somewhat hour-glass in shape, being one and a half inches wide at the top, nearly two at the base, and only three-fourths of an inch in the middle. This patch presented smaller, roughened areas, raised not more than a sixteenth of an inch above the general endocardial surface. The largest was a fourth of an inch in diameter; then smaller, polypoid masses were found, closely constricted at the base. There were smaller areas of smooth endocardium among these masses, but these, too, were thickened. The vegetations extended to the anterior leaflet but sparingly, while the longest and highest mass was found at the left junction of the leaflets. One very narrow, thread-like vegetation, five-sixteenths of an inch long, was found on the valve. No disease was found on the ventricular surface of the valve.

The other pathologic conditions equally interesting are as follows: There was a rupture of the chordæ tendineæ, which were changed in appearance and character, being all that were attached, most anteriorly and nearest the center of the valve, with only one remaining on the left; thus leaving the valve to flap back and forth without its normal control. The longest chordal fragment on the valve was three-fourths of an inch long. It was softened, thickened, and beaded, smooth over most of its length, with one hanging vegetation.

Attached to another broken chorda was a mass half an inch long and one-eighth in diameter, fastened by a narrow, small, short pedicle. Otherwise it was free to flap about in the ventricle. The other chordæ presented no peculiarities, except that they were thick, soft, and very friable.

One of the transverse bands connecting two chordæ near their origin presented a large vegetation.

No ulcerations could be found anywhere in the heart.

The coronaries were stiff, with here and there a plate of calcareous deposit, and the vessels throughout the body were stiff. The heart-substance presented no peculiarities. The spleen had three recent hemorrhagic infarcts. Otherwise there was nothing of special note.

To me this was a unique specimen, and consequently I have described it more fully than I otherwise would have done. So far as my limited range of reading goes, I can find no parallel case.

The lesions of the chordæ are peculiar. In a fibroid heart are occasionally found thinned and lengthened chordæ, associated with a fibroid condition of the columnæ carneæ, which also may be thinned and lengthened. Our specimen presents no evidence of fibroid degeneration.

Again, associated with extensive chronic induration,

thickening, and distortion of the mitral may be found shrunken, shortened, and thickened chordæ, with one or two ruptured ones. In other mitral cases there may be a vegetative deposit around the attachment of the chordæ to the valve, or the chordæ may adhere to one another; and, in addition, they may be softened and friable, though rarely are they found ruptured.

In view of the infarcts, we might suspect an ulcerative endocarditis, but no ulceration could be found, nor any new vegetations. Their presence is easily explained by loosened fragments from the chordæ, which have, in turn, plugged the splenic arterioles.

Auricular endocarditis is a very rare condition, and such a one, too, would turn our attention to ulcerative endocarditis, as this affection has no regard for the place in which it plants its vegetations.

To interpret the presystolic sound is another question. The auricular endocarditis may explain all or a part of it, or it may have been caused by the sudden and rapid return of the valve. From the number of chordæ destroyed, and the post-mortem mobility of the leaflet, it seems that the systole of the heart would force the leaflet through the orifice into the auricle, it being carried back with the regurgitant blood, and then, in turn, the commencement of the auricular systole would force the valve back through the rushing blood-current, and thus produce this sound; or this fact and the auricular endocarditis combined would do it. However, from the position of the auricular part of the disease, unless it be that on the auricular surface of the mitral, I judge that this played no part in generating the presystolic murmur.

AN AGGRAVATED CASE OF CHOREA.

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On Sunday, November 29th, a patient, Lena S., was brought to the hospital, who threw herself about in bed, all her extremities exhibiting constant violent and irregular movements. The facial muscles and tongue were also involved, causing distortion of the face and rendering her speech irregular and jerky, and at times even impossible. The case was promptly diagnosticated as chorea.

The following history was obtained from relatives: She was eighteen years of age, German, the youngest of a family of thirteen children. She came to this country one year ago, and her parents being in meager circumstances, the child was obliged to seek employment as a domestic. Menstruation began at the age of twelve years, and with the initial period came these irregular muscular twitchings, presumably choreic; they continued for a considerable time and finally passed away.

I could obtain no hint of hereditary neuropathic tendencies, save that a sister, the seventh child of the family, at the age of ten years, had symptoms that the parent described as similar to those in this girl, and which were very severe, lasting a short time and resulting fatally.

[Strümpell reports having seen three fatal cases of chorea in his private practice.]

During the three months prior to entering the hospital, the patient suffered from repeated attacks of articular rheumatism, affecting the joints of all extremities, and during the latter part of the three months she never left her bed. On the night of November 25th, four days before entrance, it was observed that her hands, arms, and legs were in a state of irregular contraction, and from this time the contraction gradually became more violent. At the time of admission she suffered from no rheumatic pains, but examination of the heart revealed most pronounced mitral and aortic systolic bruits.

She was first given calomel, 10 grains, also chloral hydras, 45 grains, in fifteen-grain doses, during the night; the following morning she was given large and frequent doses of sodium bromide and chloral, with little effect. Catheterization was necessary.

Antipyrin was now given in repeated ten-grain doses, in combination with the bromides and chloral, but all these proved of no avail. For four days the girl had taken no nourishment, except small quantities of milk given by the spoonful, carried to the posterior buccal cavity. Mastication was out of the question, and deglutition was possible only when she was fed in the manner indicated.

Nutrient enemata were now given, consisting of peptonized milk, peptonized egg, beef peptones, and whiskey. This method of feeding was continued for several days. During this time the girl's symptoms were growing worse and her movements more violent, so that restraint was necessary. Twice, when unobserved, she threw herself from her bed.

On December 4th, after the liberal use of bromides, chloral, and antipyrin, with no success, Dr. Stockton suggested hyoscine as recommended by Da Costa. I accordingly gave hypodermatically of the hydrobromate of hyoscine, $\frac{1}{100}$ grain, at 6.30 P.M., followed by $\frac{1}{50}$ grain at 10.30 P.M., and $\frac{1}{50}$ grain at 2.30 A.M. (December 5th). Each of these doses was followed by a short period of quiet. I next gave sulphonal in 20-grain doses, but with no more effect. It was now suspected there might be an hysterical element about the case; points of anesthesia were found, particularly the conjunctivæ, which, at times, were anesthetic. Mistura asafœtidæ, in large doses, was given, which seemed to dispel this condition.

It was now very evident that some other expedient must be undertaken. She had reached that point where food could not be tolerated, either by the mouth or by the rectum; in five days she had not had more than six hours' sleep. Her pulse was rapid, 164, and feeble; the temperature, 102.6°. She had moved and thrown herself about so violently that the shoulders, elbows, nates, heels, etc., were so badly chafed as to cause capillary oozing. It was finally decided to try a method recently advocated, consisting in strapping the body to a suitably arranged board, preventing even the slightest movement. Before trying this, however, it was suggested, as a last resort, to try morphine.

On December 5th, at 8 P.M., the sulphate, $\frac{1}{4}$ grain, was given hypodermatically. This was followed by the longest period of rest she had had. The effects of the drug passed off in a few hours and at 3.15 the following morning the same dose was again repeated. This was followed by the happiest results: sleep and

quiet ensued, lasting six or eight hours. From this time on, the chorea so abated as to call for no more sedatives.

In addition to the remedies directed toward quieting her, she was put upon Fowler's solution the day after entrance, commencing with gtt. v, t. i. d., and increasing one drop daily. This was continued until gtt. xvi were given t. i. d.; at this point the toxic effect of the drug was noticed, *e. g.*, puffiness of the eyes, gastric disturbance, markedly injected conjunctivæ, and cutaneous eruption. It was then discontinued for three days and again started on gtt. x doses.

As soon as she was restored to quiet, she began to take nourishment by the mouth, and improvement thenceforward was quite rapid. My attention was now called to the fact that the girl's right lower extremity was paralyzed. There was complete loss of extension; she could flex the limb to an angle of 90°, but extension was impossible. Sensation was only slightly impaired, the patellar reflex lost.

This I found to be not an uncommon sequel of chorea and described by writers as post-choreic paralysis (or paresis as in this case). Upon close questioning, I learned that monoplegia also followed her first attack of chorea, but passed away after several months. The treatment now followed was Fowler's solution, mist. asafœtidæ, strychnine, cold spinal douches, and faradism to the limb. In a short time the function of the limb was restored and the girl was discharged from the hospital apparently cured.

ACQUIRED CRURAL OVARIAN HERNIA.

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THE following case is reported for the value it may possess as a contribution to statistics. Hernia of the ovary is a rare affection. It is generally congenital and bilateral, and is usually associated with some congenital malformation of the genital apparatus, such as the absence of the uterus or imperfect development of the vulva or vagina. Albert, in his *Lehrbuch der Chirurgie und Operationslehre*, quotes Englisch, of Vienna, who, in an exhaustive study of thirty-eight cases, found that in about three-fourths of the cases the hernia existed in the inguinal region, the others being obturator, ischiatic, umbilical, and crural ovarian hernia. The latter variety is quite infrequent. In a collection of seventy-eight cases, Puech found only sixteen in which the ovary passed through the crural canal, and it has never been found before the twentieth year; it is, therefore, never congenital. In the literature at my command I have found recorded but one case of acquired inguinal ovarian hernia as the result of a preëxisting intestinal hernia. Meadows (*Obstet. Trans.*, vol. iii) has recorded an interesting case, in which there was primarily an ordinary irreducible inguinal hernia. The tumor in this case gave rise to so much inconvenience that it was removed by a surgical operation.

Winckel, Tait, Englisch, Olshausen, and Albert agree that a large proportion of ovarian herniæ are congenital, particularly the inguinal variety, in which a vaginal process of the peritoneum forms, and causes the exit of the ovary in a manner analogous to the descent of the testicle. It is not improbable that the acquired variety may obtain in this region, owing to a lengthening or to elasticity of the infundibulo-pelvic ligament, or of the ovarian ligament. As the result of a strain or injury these relaxed ligaments may permit the ovary to be forced or to gravitate through a hernial canal that had been previously dilated by a reducible intestinal or omental hernia—the ovary taking the place of these structures, as was the condition in the case I am about to report.

The diagnosis of incarceration of the ovary is not generally made. (Only seven times in twenty: Englisch.)

Mrs. Y., forty years of age, robust, a German, the mother of six living children, has always enjoyed good health. Ten years ago, while straining or lifting, she felt "something give way," and soon noticed a *soft tumor* in her right groin. This she readily reduced by rubbing; but the tumor always returned when she worked hard. At the Woman's Medical College Hospital she was ordered a femoral truss, which, however, she only wore at long intervals, when the hernia troubled her most.

On October 15, 1890, after partaking of some improper food, she had a severe attack of vomiting, which was followed by pain in the right groin, and the discovery of a hard and painful tumor, which she was unable to reduce. She had not been wearing the truss just previously to this time. The pain soon subsided, and on the following day she went about her work as usual, and danced in the evening. On the following day I was called to see the patient for the first time, and found her uneasy and in pain. Upon examination I found a hard, sensitive tumor, about the size of a walnut, situated in the region of the femoral ring. It was slightly movable; the skin was not tender to the touch, nor did taxis, which failed to effect a reduction, cause much discomfort. I was at quite a loss to know with what I had to deal. The tumor felt like an inflamed lymphatic gland. The previous history, however, was suggestive of an omental hernia, but the entire absence of the characteristic symptoms of such a condition was puzzling. Having had the experience that absence of pain in strangulated hernia is a forerunner of a dangerous condition, I advised at least an exploratory operation; to which the patient readily assented.

On October 17th the parts were carefully shaved and cleansed. The patient was etherized. Having cautiously cut down through the various layers of tissue, I reached what was supposed by myself and other physicians present to be a thickened hernial sac. Upon opening it, to our great surprise it proved to be the broad ligament. I found neither intestine nor omentum, but a cystic ovary. When strong traction was made on the ovary, the right cornua of the uterus could be made to assume an oblique and anteverted position, and the wound being enlarged, the fundus of the uterus could be felt by the index finger. This procedure finally corroborated the diagnosis of hernia of the ovary.

The ovary was found in the hernial sac without the Fallopian tube or its fimbriated extremity. The strangulation at the crural ring was so severe that the ovary and its pedicle (broad ligament) were deeply congested, their vitality being undoubtedly greatly impaired. Not willing to run any risk by reducing the organ in this

condition, the pedicle was transfixed and tied as in ordinary oöphorectomy. Great care was exercised to prevent the entrance of blood into the abdominal cavity. The stump was thoroughly irrigated with boiled water, and dropped into the abdominal cavity. An assistant made a vaginal examination and found the uterus in its proper position.

The wound was united with two tiers of catgut sutures and left without drainage. The temperature did not rise above 99°, and the wound closed firmly under one dressing. At the conclusion of the operation it occurred to me that I had missed the opportunity of doing a unique operation for the radical cure of this patient's intestinal hernia. If the stump, which consisted entirely of the broad ligament, had been stitched to the ring and the deeper structures of the wound, it might have proved an excellent barrier to the descent of the gut. This procedure, however, would be open to severe criticism in case of a future pregnancy, and would, perhaps, be admissible only when both ovaries are removed, or if the menopause is close at hand. The patient remained in bed three weeks, when a suitable femoral truss was applied. She is now in excellent health, and is able to attend to her household duties.

CYST OF PERITONEUM RESULTING FROM IMPACTED GALL-STONES; AUTOPSY.[1]

BY J. H. McCASEY, M.D., C.M.,
OF CONCORDIA, KANSAS.

MISS R. S., fifty years old, a housemaid, presented a history of ague in childhood. Between the ages of seven and twelve years she had occasional attacks of jaundice. At sixteen she had an attack of typhoid fever lasting three weeks. As long as she can remember she has had pain in the right hypochondrium, so that "she could scarcely drag her right foot." Vomiting occurred with great readiness. She suffered with decided distention of the abdomen. Her life had been an active one, and she had been exposed to many hardships and privations.

Called to see her in June, 1890, I found the temperature 103°, the pulse 106, the abdomen tympanitic and extremely tender. I then diagnosticated peritonitis, expressing a suspicion of the existence of an abdominal tumor, but owing to the tenderness I could not make the examination conclusive. The patient was confined to bed for about three weeks, but recovered without further mishap.

On June 26, 1891, I was again called to the patient. The temperature was 102°, the pulse increased in frequency. She was suffering with severe dragging pain in the right hypochondrium and freely vomited bilious matter. The abdomen was distended, and there was perceptible bulging, with flatness on percussion, just below the liver. I told the patient that there was likely a cystic tumor, and that I would return in a few days to aspirate and remove the fluid.

On July 1st, with the assistance of Dr. Coffey, I withdrew about two quarts of dense, blackish fluid.

About July 17th, with the assistance of Dr. Sawhill, I withdrew about three-fourths of a bucketful of the same kind of fluid mixed with pus. About a week later, I again applied the aspirator, but failed to obtain any fluid. On August 11th, I succeeded in obtaining about three-fourths of a bucketful of pus. On August 16th, I introduced a trocar and canula, and permitted the canula to remain for five days, a continuous discharge of pus taking place. The woman died on August 27th.

At the autopsy, twelve hours after death, on opening the abdominal cavity in the mesial line, the peritoneum was found black and discolored. The gall-bladder was of medium size, and was filled with gall-stones—seven or eight in number, some as large as marbles. The small ones occupied the cystic duct. The liver was somewhat enlarged, but was otherwise quite healthy. Below the liver was a large cystic tumor, having a capacity of a gallon or more. Its inner walls were calcified. The sac was greatly thinned at several places. At the lower and posterior aspect a rupture had taken place.

With regard to cyst of the peritoneum, the *Reference Handbook* says that it is of so rare occurrence as not to claim mention in a work of that kind. Flint, Loomis, and all the text-books do not mention the subject at all, but refer to serous peritonitis, which most nearly resembles this case. But in this case we have a tumor-sac, and from the history of the case it would appear to have been in existence for twelve years. The inner wall of the sac had time to become calcified. I think all this establishes the diagnosis of cyst of the peritoneum and not chronic serous peritonitis, as might appear. The sac was badly decayed, and it was difficult to find its starting-point. But it seems probable to me that the gall-stones, or rather, hepatic colic, set up circumscribed peritonitis, which acted as a nucleus for the formation of the simple cyst of the peritoneum. Catarrh of the bile-duct or inflammation of the gall-bladder may often precede the formation of gall-stones and the mucus excreted serve as a nucleus for a gall-stone. An excess of the salts of lime or of bile-pigment or retention of bile may be exciting causes of biliary calculi.

[1] Read before the Republican Valley Medical Society, October 1, 1891.

A CASE OF ACRANIA.

BY G. W. PIRTLE, M.D.,
OF CARLISLE, INDIANA.

ON August 3d I was called to see Mrs. D., and found her in the first stage of labor. The bag of waters was protruding as a slender mass, like the fingers of a glove, an inch from the vulva. Upon very slight manipulation, it was ruptured during a pain that occurred just as I was attempting to make my first digital examination; a small quantity of amniotic fluid escaped. On completing my examination, I found a head engaging in the left oblique diameter, with the occiput anteriorly. By external manipulation I thought I could distinguish the presence of two bodies, but from the fact that the abdomen was greatly distended and tense I could not be positive. In a few minutes, an apparently healthy child was born, but it was very small, and died in about three hours.

Immediately after this child was born, there came a great gush of water, flooding everything completely, saturating the bed, and running through on the floor. After the first gush of fluid I made an examination and found an arm, with the hand slightly protruding from the vulva.

Upon passing my hand upward I was unable to find any round mass or anything that seemed to the touch like a head. But in the position where it seemed that the head should be (judging from the position of the presenting hand and arm) there was an irregular mass, different from anything that I had ever felt in obstetric practice. I was not a little perplexed, but decided to proceed at once on the orthodox plan and perform podalic version, which was accomplished without much difficulty, and the child was soon delivered. On examination a condition of acrania was found to exist. The absence of the brain was complete, the cord ending in a small bulbous extremity about five or six millimeters in diameter. The parietal and vertical portions of the frontal, and the posterior portion of the occipital bone were completely wanting. The squamous portion of the temporal bone seemed to be absent, and in its place was a round mass of bone. The anterior and middle fossæ of the skull were complete, but that portion of the cranium which is posterior to the foramen magnum was absent. Upon dissection I was unable to find positively the intra-cranial portions of any of the cranial nerves, although near the apex of the petrous portion of the temporal bone there was a mass of tissue that corresponded both in position and appearance to the Gasserian ganglion. The optic nerve terminated in a bulbous mass just at the internal opening of the optic foramen. The eyes were well developed and very prominent, giving the specimen the remarkable frog-like appearance so often spoken of in descriptions of acrania. The rest of the body was well developed, but small. When born, the heart was beating regularly, but its action soon became intermittent, though I was able to keep up a feeble pulsation by artificial respiration for several minutes. There was no attempt at respiration. In fact, the only movement perceptible was a slight tremor in the muscles of the lower limbs, which occurred when the bulbous extremity of the cord was touched.

This case is interesting for three reasons: First, it was a case of polyhydramnios; second, the presentation was abnormal; third, the fetus was a monstrosity.

Acrania is, perhaps, the most common of all important and striking monstrosities. The perplexity it gives the physician makes the subject of more importance than any impediment that it might cause in labor. One who has never attended a case in which the fetus has presented a condition of acrania cannot help feeling somewhat perplexed when, upon examination, the finger comes in contact with the floor of the skull of an acranial monster. In the case reported the presentation was one in which, had the fetus been perfect, version would have been required; but, from the fact that the head was incomplete, I am confident that it would have been delivered naturally; not feeling fully satisfied, however, I was unwilling to allow the child to become impacted in the passages.

The Corpuscle is the name of a twenty-four page journal published monthly by a board of editors constituted of undergraduates chosen from the classes of Rush Medical College, Chicago, by election. Number seven of volume one bears date of February 20, 1892, and does credit alike to editors, students, and faculty.

CASE OF INTUSSUSCEPTION IN AN INFANT.

By D. E. RUFF, M.D.,
of Junction City, Oregon.

In a medical experience of twenty-five years, I have never met a case of this kind in as young a patient as the one with the following history: On October 29, 1891, at 5 P.M., my child, a male, then seventeen days old, began crying severely. The mother gave some simple remedy for colic at the time, but this failed to give any permanent relief. At 6 P.M. a small dose of castor oil was given, as it had been frequently used with good results in the case of an older child. For a short time after taking the oil it stopped crying and began to strain or bear down, and moan, crying only occasionally and for a short time. At 10 P.M. it commenced to vomit and hiccough very severely; suspecting then something more than colic to be the trouble, I examined the bowels thoroughly and discovered a kidney shaped tumor on the right side, slightly tender and movable. Recognizing at once that I had a case of intussusception to deal with, I immediately gave an injection of lukewarm water, holding the child partly inverted. After five minutes' retention, the contents of the lower bowel were passed. I then held the child up by the shoulders and pumped air into the bowel, until the belly became quite tense, and used light friction over the bowels. I alternated the injections of water and air until midnight. I then gave chloroform, until the child was thoroughly relaxed, and used external manipulation over the tumor, pressing downward at each extremity and pulling the hands apart. In this manner I partially reduced the invagination to three inches, which at first was about five inches in extent. After emptying the lower bowel with the water first injected, there had been no movement of the bowels, and the later injections brought away only flecks of mucus.

At 2 A.M., the 30th, I gave a dose of morphine, so small that it would be difficult to tell how much. I had no hopes of his recovery. His features had now become pinched and drawn, and I gave the hypnotic to ease him of his sufferings, which were severe and very acute.

I still continued the alternate injections of water and air. At 9 A.M. he became more cadaveric in appearance, and he had every appearance of dying. As we had a good open fireplace, I had no trouble in keeping him warm, except the hands, which would get cold when exposed for only a few minutes. At 11 A.M. the bowels were moved, the action being of a very dark green color, with scattered flecks of undigested milk. His appearance now improved; he did not look so death-like. He was fully under influence of the opiate at this time. No change was noticed in his features or condition until 3 P.M., when he gave a severe and sudden start or jump, straightened out his legs for an instant, and then relapsed into a seemingly more natural sleep, the features clearing up, and the breathing becoming easy and soft. Examining the bowels now, I found the intussusception had become reduced.

In all the literature at my command, I cannot find a case like this, at as young an age, and I give a full history of the case. The child, at birth, weighed six pounds, and previous to this trouble the bowels had been too loose, moving eight or ten times in twenty-four

hours, with flakes of tough, stringy mucus and undigested milk, and occasionally the actions were of a dark-green color. At this date the child weighs thirteen pounds net, and is plump and hearty, and will laugh and crow when noticed; the bowels are in good condition, and the milk fully digested. He has never been fed artificially.

SEVERE "COMMON COLD" DUE TO REFLEXES FROM THE EYE.

BY GEORGE M. GOULD, M.D.,
OPHTHALMOLOGIST TO THE PHILADELPHIA HOSPITAL.

ILLUSTRATIONS of neurotic reflexes proceeding from nasal and naso-pharyngeal abnormalities are common, but instances of reflexes from the eyes to the nose, etc., are so rare that the following striking case should be known to others.

The vexing peculiarity about all such phenomena is that they may be taking place every day unrecognized by physician or patient. Had my patient and his family not been people of exceptional intelligence, the facts I am about to relate would not have been discovered.

Mr. W. H. P., forty-six years of age, a fine type of the clear-headed, well-educated, successful business man, consulted me May 10, 1890. His only complaint was of slight asthenopic trouble in near work. He had long known that he was near-sighted, but he did not care for better distant vision.

With paralyzed accommodation I found his error of refraction to be:

R. — sph. 2.25 D. ⊂ — cyl. 0.75 D. ax. 140°.
L. — sph. 4.00 D. ⊂ — cyl. 1.50 D. ax. 65°.

There was also exophoria of 6°.

It was with much difficulty that I prevailed upon him to wear for continuous use:

R. — sph. 0.75 D. ⊂ — cyl. 0.75 D. ax. 140°.
L. — sph. 2.00 D. ⊂ — cyl. 1.50 D. ax. 65°.

with prisms 2½° each eye base in.

He very soon came to like the glasses and wore them all the time. He would not get stronger glasses for distant use.

I heard nothing more from Mr. P. until the following spring, March 29, 1891, when his wife told me of her husband's excellent health, and that the past winter he had been free from the usual severe "cold," with which he had suffered every year the entire winter through for eighteen years. At this time none of us suspected the ocular origin of the "cold."

On April 3, 1891, I got my patient to order a pair of stronger lenses, correcting his myopia. In a week he "caught a wretched cold"—as he said, "in a sleeping-car." It was afterward learned that the day he caught the cold was the first day he had worn his stronger lenses.

On July 22d, he returned displeased with the stronger glasses. He had discovered that every time he wore them for an hour he at once had his old-time trouble of the nose and throat, consisting in great coryza, pharyngeal and laryngeal congestion, changed timbre of voice, etc. These symptoms always disappeared in a few hours upon a change to the weaker lenses. This fact he has since proved many times. If he goes to the theater or other public meeting, he frequently wears the stronger spectacles for an hour or two, for the satisfaction of more perfect distant vision. He invariably contracts the cold in so doing.

Not only this, but he has several times met with slight accidents to his weaker spectacles, so that becoming maladjusted, the axis of astigmatism was thereby improperly rotated. In such cases the cold reappears. Indeed, so routine has the phenomenon become that he now suspects maladjustment of the spectacle-frame whenever he begins feeling any nasal irritation. After a trip to the optician and a proper setting of the lenses, his cold disappears within about two hours.

Several lessons seem suggested by this case—to the general physician and rhinologist as regards the possible extra-nasal origin of nasal and pharyngeal trouble; to the oculist as to the remote effects of ocular strain, and also as to full correction of myopia; and to the patient and optician as to the maladjustment of astigmatic lenses.

MEDICAL PROGRESS.

The Urinary Ptomaines of Exophthalmic Goiter.—BOINET and SILBERT (*Revue de Médecine*, No. 1, 1892, p. 33) have succeeded in isolating from the urine of a patient with exophthalmic goiter, three ptomaïnes, inducing in animals symptoms analogous to those observed clinically. If extracted by an alkaline medium the ptomaïnes are designated α-ptomaïnes; if extracted by an acid medium, β-ptomaïnes. Each of these, according to its solubility, is named ethereal, amylic, or benzenic. The crude active principle obtained by evaporating the urine has a convulsant action. The amylic α-ptomaïne causes slowing of the heart, enfeeblement of the systole, arhythmia, prolongation of the diastole, and arrest of the heart in diastole. The benzenic α-ptomaïne gives rise to passing diminution in the energy of the systole, then to transitory increase in the systolic amplitude; subsequently there follows an enfeeblement of the systole and an augmentation of the diastole. The ethereal α-ptomaïne produces a slowing of the heart's beat, with a diminution in the energy of the systole, followed by an acceleration of the heart's beat, with an increase in the systolic amplitude, and finally cardiac weakness; the heart is arrested in systole. The amylic β-ptomaïne gives rise to passing augmentation of the energy of the systole, followed by enfeeblement of the heart's beat and arhythmia; the heart is arrested in diastole, from paralysis of the muscular fiber. The amylic β-ptomaïne causes slight depression of temperature, followed by elevation. The ethereal β-ptomaïne increases the amplitude of the systole and causes muscular resolution.

Two Cases of Abscess in the Region of the Medulla Oblongata.—EISENLOHR (*Deutsche med. Wochenschrift*, No. 6, 1892, p. 111) has reported two interesting cases of abscess in the region of the medulla oblongata. The one occurred in a man, forty-three years old, with bronchiectasis and empyema. One arm and one leg first became paralytic and anesthetic, and then the extremities of the opposite side. The reactions of the left pupil were deranged. The patient died in marked dyspnea. At the autopsy, an abscess, as large as a pea, was found in the medulla oblongata, beneath the floor of the fourth

ventricle, extending by a prolongation into the cord and involving the posterior roots and gray matter as far as the second cervical root. The second case occurred in a man, twenty-five years old, in the course of an attack of cerebro-spinal meningitis. The reactions of the pupil were deranged; there were general cutaneous hyperalgesia and unilateral facial paresis; consciousness was impaired; severe epileptiform convulsions set in; and death ensued. At the autopsy, in addition to the lesions of cerebro-spinal meningitis, a minute abscess was found at the level of the corpora quadrigemina, close to the aqueduct.

A Bullet in the Brain for Twenty-nine Years.—Conniff (*Vis Medicatrix*, i, 5, 1892, p. 279) has reported the case of a man, sixty-three years of age, whom he was called to treat in an attack of enteritis. There was, besides, a history of pain in the head and an inability to lie on the right side. Inquiry elicited the fact that twenty-nine years previously the man had received a gunshot wound at the left angle of the mouth, the bullet, it was supposed, entering the brain. The patient maintained that upon rotating his head he could feel the missile just back of the left ear. He had suffered almost constant headache, at times most intense and attended with vertigo. Hearing was lost on the right side. Vision was impaired on the left. The patient died, and at the autopsy, in addition to the lesions of a plastic enteritis, a bullet was found imbedded in the occipital lobe of the left cerebral hemisphere, behind the posterior cornu of the lateral ventricle. The bullet had entered near the left angle of the mouth, passing beneath the malar bone and entering the cranium through the left orbital cavity close to the optic nerve; thence it had passed toward the left lateral sinus.

An Immunity-conferring Principle in the Blood of Animals Treated with Tuberculin.—Having observed some degree of immunity in tuberculous guinea-pigs treated with tuberculin, Tizzoni and Centanni (*Centralbl. f. Bakteriol. u. Parasitenk.*, xi, 3 u. 4, p. 82) preceded injections of suspensions of tubercle-bacilli into the jugular vein by the introduction of the serum of the blood of such animals into the peritoneal cavity. Of ten animals thus treated, five died. All presented local lesions at the site of inoculation. In the fatal cases death was deferred and the visceral lesions were less extensive than usual. The view is expressed that tuberculin is, or the soluble products of the tubercle-bacillus are, capable of conferring a certain degree of immunity dependent upon the presence of an active agent in the blood, and that the good effects of tuberculin do not result from a direct action, but are dependent upon the generation in the body of some protective principle, which it is hoped future investigations will succeed in isolating.

Enteric Fever in an Infant Nine Months Old.—Fuller (*Lancet*, No. 3558, p. 1038) has recorded the fatal case of an infant, nine months old, that presented manifestations of irritability and dulness, with diarrhea, tympanites, and elevation of temperature. At the autopsy, though the spleen was not enlarged, Peyer's patches were found swollen above the surface of the mucous membrane, some of the lower ones beginning to ulcerate. The adjacent intestine was injected. The mesenteric glands were enlarged and the solitary glands of the cecum were abnormally prominent. In the same house in which the infant lived, an older child of eighteen months, as well as a woman, presented symptoms similar to those of the infant.

Filariosis.—Moty (*Revue de Chirurgie.*, No. 1, 1892, p. 1) reports six cases of filariosis observed at Val-de-Grâce. The most common manifestation was dilatation of the lymphatics of the groin and spermatic cord, dependent upon the irritation of the filariæ or their embryo. The diagnosis may be made upon the clinical manifestations, but is to be confirmed by the detection of the embryos in the blood. Internal treatment is useless. Palliative external treatment is not to be commended. If the manifestations are decided, surgical intervention, with the removal of the parts most involved, is indicated. It may thus be possible to remove the adult filaria.

A Hitherto Undescribed Anomaly in the Mechanism of Labors in Face Presentation.—Hirst (*University Medical Magazine*, iv, 5, 1892, p. 341) has reported a case of labor terminating fatally, in which the face presented, the mechanism being complicated by a hitherto undescribed anomaly. The abdomen of the child was turned slightly toward the right, the back to the left, anteriorly. The face was transverse, the chin directed slightly posteriorly. The occiput and the right shoulder were in close apposition. Descent of the head was impossible, while extension was prevented by the position of the right shoulder.

Atrophy of the Maxillary Bones in Posterior Spinal Sclerosis.—According to Rosin (*Deutsche Zeitschr. f. Nervenheilk.*, 1891) it is not rare in the course of posterior spinal sclerosis, not only for the teeth to fall out, but also for atrophy of the alveolar margin to take place, either by absorption or by sequestration. The inferior maxilla is less frequently affected than the superior maxilla. The mucous membrane in the atrophic areas is anesthetic. These associated manifestations may occur early or late in the course of the disease.—*Journal de Médecine de Bordeaux*, No. 5, 1892, p. 63.

Toxic Effects of Impure Chloroform.—As a result of experiments on animals conducted in the Pharmacologic Laboratory of the University of Berlin, Dubois-Reymond (*British Medical Journal*, No. 1622, p. 209) has found that the toxic effects of chloroform are greatly increased by the presence of impurities. By the method of Pictet, of crystallizing chloroform by intense cold, it was possible to separate the pure drug from impurities. The latter occasioned greater frequency of pulse, greater depression of blood-pressure, and cessation of respiration more quickly than did the former.

The Temperature in Old Age.—As a result of continuous observations made under uniform conditions of health, in the cases of three persons, aged eighty-two, eighty-three, and eighty-nine years respectively, Kelynack (*Medical Chronicle*, xv, 5, p. 289) has found that the temperature, as registered in both rectum and axilla, is

distinctly below that of healthy children and adults. The rectal temperature was from one-fifth to one degree higher than the axillary temperature.

THERAPEUTIC NOTES.

For Fetid Breath.—

℞.—Thymol . . . . . ʒj.
Borax . . . . . ʒij.
Alcohol . . . . . f ʒiij.
Distilled water . . . f ℥ijss.—M.

S.—Use several times a day as a gargle.

Or,

℞—Salicylic acid, Saccharin, Sodium bicarbonate } āā gr. xvj.
Alcohol . . . . . f ℥j.—M.

S.—f ʒ in water, as a gargle, several times daily.

Journal de Méd. de Paris.

Palatable Castor Oil.—As the result of a series of experiments, STAADKE (*Deutsche medicin. Wochenschr.*, 1892, No. 4, p. 87) believes that he has succeeded in removing the nauseous taste of castor oil. The best castor oil is repeatedly treated with hot water, then sweetened with sufficient saccharin to possess a syrupy taste. Minute quantities of the aldehyde of cinnamon oil and of vanilla flavoring suffice to completely cover whatever disagreeableness of taste remains. Oil so prepared has been found to be as efficacious and as permanent as the ordinary oil.

For Coryza.—

℞.—Cocaine hydrochlorate . . gr. ix.
Menthol . . . . . gr. xv.
Coffee, parched and finely pulverized . . . . . gr. xxx.
Boric acid . . . . . ʒij.—M.

S.—Take five or six good pinches, as a snuff, a half-dozen times daily.

COUPARD, *Monde Therapeutique.*

Treatment of Hiccough by Compression of the Phrenic Nerve.—At a meeting of the Académie des Sciences, LELOIR (*Journal de Médecine de Bordeaux*, 1892, No. 5, p. 59) reported the successful treatment of a considerable number of cases of otherwise incoercible hiccough, by means of digital compression of the phrenic nerve, for from a few seconds to a few minutes, between the two clavicular attachments of the sterno-cleido-mastoid muscle.

For Chronic Rheumatism.—

℞.—Sodii iodidi . . . . ʒij.
Sodii bicarbonatis . . ʒiv.
Potassii bicarbonatis . . ℥j.
Liquor. potassii arsenitis . f ʒjss.
Decoct. sarsaparillæ comp. ad f ℥xx.—M.

S.—A tablespoonful in considerable water three times a day after meals. WHITLA.

For Acne.—The following formula is recommended for internal administration in cases of acne associated with anemia:

℞.—Ferri sulphat. . . . gr. xxiv.
Acid. sulphuric. dilut. . . f ʒj.
Magnesii sulph. . . . ʒiv.
Sodii sulph. . . . . ʒiv.
Aquæ menth. pip. . ad f ℥xij.—M.

S.—Two tablespoonfuls before meals. WHITLA.

For Psoriasis of the Scalp.—The following ointment may be employed in psoriasis of the scalp if the disease be limited and there be no irritation.

℞.—Salicylic acid, Pyrogallic acid } . . āā gr. xxiv
Ichthyol . . . . . gr. xlviij.
Soft potash soap, Vaselin } . . āā ℥j.—M.

S.—Apply cautiously on alternate days with gentle friction.

BESNIER, *Revue Gén. de Clin. et de Thérap.*, 6, p. 89.

For Moist and Painful Leg Ulcers.—The following has been successfully employed as a topical application in the treatment of moist and painful ulcers of the leg:

℞.—Acid. salicylic. . . . . ʒij.
Acid. boric. . . . . gr. lxxij.
Zinci oxidi . . . . . gr. xlviij.
Amyli, Pulv. talc. } . . . āā ℥j.—M.

WEISMÜLLER.

A Deodorant.—When, in case of carcinoma of the uterus, a deodorant is required, the following combination will prove useful:

℞.—Acid. salicylic. . . . gr. viij.
Sodii salicylat. . . . ʒiij.
Tinct. eucalypti . . . f ʒvj.
Aquæ destillat. . . . f ℥vj.—M.

S.—Three tablespoonfuls are added to a pint or two pints of water, and used as a douche every three or four hours. WHITLA.

Gall-stones.—In an interesting paper on gall-stones, GOODHART (*British Medical Journal*, No. 1622, p. 219) expresses the view that in many cases the formation of such calculi appears to be related to some mental strain or to a neurotic condition. He has seen beneficial results follow the administration of olive oil. For the itching of the skin that attends the jaundice he recommends pilocarpine, by the mouth or hypodermatically.

Treatment of Goiter.—AUERBACH (*Deutsche medicin. Wochenschr.*, 1892, No. 3, p. 60) recommends interstitial injections of osmic acid in the treatment of goiter. One-twelfth of a grain, in solution, is injected daily into the tumor, followed by a massage for fifteen minutes, while potassium iodide is given internally.

A Deodorant for Iodoform.—The ethereal oil of coriander is recommended as a deodorant for iodoform. It is directed that eight drops of the oil be thoroughly incorporated with a dram of iodoform.

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SATURDAY, MARCH 12, 1892.

RECENT PROGRESS IN THE STUDY OF THE BLOOD.

ADVANCES in the medical sciences are so rapid and publications so numerous that occasional "stock-taking" becomes a necessity, lest the facts acquired be engulfed and hidden in the very mass of contributions that gave them forth. A review of recent progress in the knowledge of the diseases of the blood is at once a profitable and pleasant work, for in few branches of medicine will we find advances so far-reaching in the results already attained, so promising for the future.

Someone has said that we owe as much to the maker of instruments of precision as to ourselves for the advances in modern science, and assuredly there is more than a grain of truth in this. Without the hemocytometer, the hemoglobinometer, and the microscope we should still remain in ignorance of many well-established principles, valuable in diagnosis and still more so in treatment. Without these aids we might find consolation in the words of a prominent therapeutist, who says: "How interesting to be able to count the corpuscles and measure the hemoglobin, but I see by the skin that this is anemia, and my studies teach me that iron cures anemia." Doubtless it is true that we may diagnosticate anemia by the appearance of the skin, but aside from any thought of the fact, so well stated by SANSOM, that "no disease is well treated that is misunderstood," practical experience and scientific investigation have demonstrated that there are cases of anemia and anemia, often distinguishable, not by the hue of skin or the clinical history, but by the careful study of the blood, and by this alone.

It has been sufficiently established that there are three classes of anemia readily distinguishable by the condition of the blood: first, simple anemia, in which the hemoglobin and the number of red corpuscles are correspondingly diminished; second, chlorosis, in which the hemoglobin is lessened far out of proportion to the diminution in the number of the red corpuscles; and, third, pernicious anemia, with its proportionately overwhelming decrease of red corpuscles and the relatively increased richness in hemoglobin of the individual corpuscle. These may be taken as types, to one or the other of which all the various forms of secondary anemias may be referred; and if future observation fails to confirm our present views (LAACHE) that iron is of especial value when the chlorotic character is assumed, and arsenic when the blood is especially poor in the number of its corpuscles, it has been proved beyond dispute that the examination of the blood for the determination of the type to which a case of anemia belongs is of the utmost service in establishing the diagnosis, and therefore the prognosis and treatment.

It is to the point to cite cases, such as those reported by MOUISSET, of Lyons (THE MEDICAL NEWS, February 13, 1892), cases of carcinoma of the stomach, in which the constantly increasing cachexia assumes the aspect of pernicious anemia, but in which the blood is of decidedly chlorotic character. We recall the case of an old man with most profound anemia, with increasing weakness, and pallor and slight fever at times, but without palpable tumor of the epigastric region, and without vomiting except from indiscretion in diet—in short, a picture of pernicious anemia, and yet, by discovering a chlorotic condition of the blood, or at least a condition not approaching pernicious anemia, we were enabled to diagnosticate malignant disease, and autopsy confirmed the diagnosis. So, too, there are occasional cases of tuberculosis, of malaria, of chlorosis, and other diseases—not a few of them curable—in which the outward manifestations mimic

this grave blood-disease, and which are distinguishable from it only by examination of the blood itself. What, then, are we to say of him who sets aside such valuable aids for diagnosis, and tells us it is possible to see by the pallor that there is anemia?

Another great group of cases to which attention must be directed, and the study of which has received renewed impetus of late, are those in which the leukocyte plays an important rôle. Since 1846, when VIRCHOW first recognized leukemia as a blood-disease and set aside the faulty notions of the older pathologists about "suppuration of the blood" and "hemitis," observations have been steadily accumulating, but none compares in importance with those of EHRLICH on the nature of the white corpuscles in health and disease. In pointing out that our old conception of leukocytes as simple masses of protoplasm, with ameboid motions, was not comprehensive enough, and that there are various kinds of leukocytes widely different in nature and origin, and in offering a ready means of distinguishing these, EHRLICH has contributed knowledge that has already yielded rich results and that will accomplish much more. It would be far from the present purpose to review the work of EHRLICH, even briefly, but we may state that by peculiar methods of staining he has succeeded in establishing five varieties of leukocytes in normal blood and in determining their relative proportions, and that he has found in the blood of leukemia a greatly increased number of one of these forms, and besides, a form such as is never found in conditions of health (myelocytes).

Such being the case, it will be readily seen that, aside from the high scientific value of the observations themselves, that he has placed in our hands the means of distinguishing the various forms of leukocytosis from the cases of true leukemia, since in the former the corpuscles present to a great degree the normal characteristics and relations. We would direct attention in particular to the varied forms of disease in children, so well detailed by LUZET,[1] in which, besides enlargement of the spleen, there is also more or less marked leukocytosis. Among these may be named congenital syphilis, rickets, and that peculiar form of disease described by JAKSCH as infantile pseudo-leukemia — all resembling true leukemia, but distinguishable, as LUZET and also BAGINSKI[2] have shown, by the color-tests of EHRLICH. The resemblance of these diseases, and sometimes other diseases of childhood as well, to leukemia, while usually not so close as to require special means of diagnosis, at times becomes so marked that the character of the leukocytes, as determined by EHRLICH's methods, alone serves to make the diagnosis. So, too, in cases of chronic malaria in adults, the enlarged spleen, the progressive anemia and weakness, together with marked leukocytosis, present a complex of symptoms scarcely to be distinguished from leukemia, except by the character of the leukocytes. The practical utility of these methods could receive no better illustration than the case of TOULMIN and THAYER,[1] one of leukemia, in which, under treatment, the spleen diminished in size, the general symptoms abated, and the excess of leukocytes disappeared. In such a case it would be impossible to diagnosticate leukemia, except that, as was actually found, there still remained myelocytes and the proportions of the different forms characteristic of the disease. Subsequent relapse, with reappearance of the symptoms, confirmed the diagnosis. The value of these investigations cannot at the present time be rightly estimated, for we have yet much to learn of the extent to which they are applicable, but the few examples cited are sufficient to indicate the immense importance of continued study in this branch of pathology.

Still another line of research demands notice—the study of microörganisms and foreign elements in the blood. It is noticeable how little bacteriology has accomplished in this direction, for though many microörganisms have been found in the blood, there are few the detection of which serves any practical purposes; of these we may mention the malarial organism, the spirocheta of relapsing fever, and the bacillus of anthrax. Whatever the future may determine as to the nature of the malarial organism, or its exact relation to the disease as a cause, there can no longer be any dispute as to its value for diagnosis. We may call attention to the recent paper of DOCK[2] in connection with this subject. Examination of the blood for anthrax-bacilli may be of great interest in cases of intestinal anthrax consequent upon meat-infection, and may be the means of establishing the diagnosis.

In thus reviewing some of the practical points in the recent advances in the study of the blood, we hope that it is clear that a more general adoption of

[1] Rev. des Mal. de l'Enfance, May 2, 1891.
[2] Arch. für Kinderheilk., 1891, Bd. xiii, 1, 4, 5, 6.

[1] Johns Hopkins Hospital Bulletin, May–June, 1891.
[2] THE MEDICAL NEWS, May 30, 1891.

these means of investigating disease has become a necessity. We are well aware of the obstacles in the way of the introduction of such methods in private practice, but even in our hospitals they have been neglected, and here the scientific value of such work alone should have been sufficient to secure its introduction.

We might enlarge greatly, and extend our remarks to the researches into the nature and cause of the blood-diseases, chlorosis and pernicious anemia in particular, or to the studies of the physiology of the blood-making organs, stimulated by the new methods of investigation furnished by Ehrlich, or the promising questions of antagonism between the fluids of the blood and microörganisms, but the purpose here has been to direct attention only to the practical side of these questions, and to urge a more general practice of methods of study that must prove of the greatest value.

CONCEALED GOUT.

Our last issue contained an interesting and valuable paper on "Obscure Forms of Gout," that had been read before the College of Physicians by Dr. Dulles. In the discussion elicited by this paper, it was truthfully said that the author had not done full justice to the knowledge and diagnostic acumen of his colleagues. Certainly, no such widespread ignorance of the subject prevails in Philadelphia as one might infer from the language used by Dr. Dulles. Nor do we believe that such ignorance prevails anywhere in the United States where the Alumni of Jefferson Medical College have gone. In each year of the more than twenty years that Professor DaCosta has taught at Jefferson, he has called frequent attention to the subject in his didactic and clinical lectures; and it would be simply impossible for any considerable proportion of his pupils to be uninformed concerning it, even if they had never looked into a book or read a journal. The occurrence of "half-gout," "American gout," or "lithemia," has thus become a matter of common knowledge, and has yearly been handed down to new classes by teachers that he has taught. Doubtless, other colleges and other chairs might be similarly cited, but we are simply offering personal testimony, not hearsay. The small number of papers by Americans to which Dr. Dulles refers, may be accounted for on a more flattering hypothesis than that of ignorance. The earlier authors treated the subject so thoroughly, and made it so familiar, that they left little for competent successors to add, and made unfamiliarity with the facts among the profession at large impossible.

Dr. Dulles's paper, apart from the point criticised at the meeting and in these lines, is a good and timely one, and will no doubt assist In the better diffusion of the knowledge of an important subject.

PROTEST AT ONCE.

The News has no interest in politics, and for that reason feels free to protest when politics injures medicine. Our indignation is stirred by the fact that under the provisions of the Army Appropriation Bill, reported by the Military Committee to the House of Representatives, the usual annual appropriation for the Library of the Surgeon-General's office, U. S. Army, is cut down one-half—that is, it is reduced from ten thousand to five thousand dollars. If this is not changed, either in the House or in the Senate, the result must be that the formation of a complete medical library at Washington, which has been going on so successfully for the last ten years, must be stopped—that all the new medical books and journals can no longer be purchased—to say nothing of the prevention of purchases of valuable works still required to make the collection what it should be—an absolutely complete reference medical library for the use of the United States.

When a member of Congress dies, "a junketing tour" with Pullman cars, etc., costing us thousands of dollars, is made to appear as a part of the funeral honors, and expenses. Every year every representative votes himself, his family, his friends, his clerks, and his pages high-priced pocket-books, ink-stands, knives, etc.; quinine, drugs, and all manner of "druggists' sundries"; soaps, puff-balls, cologne, silver hair-brushes, and every sort of toilet article imaginable—an infinitude of expensive trash, the total amounting to nobody knows how many thousands of dollars.

Then he would cripple medical science, education, and progress by reducing the already too small appropriation for the National Medical Library!

Every reader of The News, every physician of the United States, should immediately write his representative at Washington protesting most earnestly against such an outrage.

SELECTION.

A PLEA FOR HOME INDUSTRY FROM A MEDICAL POINT OF VIEW.[1]

A FEW days ago I had a strange dream, and since then I do not find any peace of mind. The question of protection, free trade, home industry, etc., haunt me by day and night. After you have heard the story of my nightmare you will understand why I presume to talk politics in a medical society.

I dreamed that I was sitting in the gallery of the House of Representatives. Hon. Nulite, a Representative of the recently annexed State of ——, introduced the following bill:

WHEREAS, Graduates from our regular and lawfully incorporated medical schools, citizens of the United States of America, have fallen of late into the bad habit of leaving their motherland, travelling into strange countries, and thus depriving our country for a certain period of time of their services as useful citizens in their respective avocations; and,

WHEREAS, The number of said birds of passage has increased in a geometric ratio, and from information gathered through our European consulates it appears that the number of said unpatriotic sons had, in 1891, reached the alarming number of 2000 souls, and allowing the expenses of each of them to be $1000 per annum, a simple multiplication will reveal to us that our National wealth is decreased by the colossal sum of two million dollars yearly; and, further,

WHEREAS, From personal interviews with many of said M.D.'s, I have learned that the motive for this, their strange behavior, is none other than the supposed imperfect and unsatisfactory method of teaching now prevalent in the medical schools of our country, and that they look upon themselves as upon so much *raw material* exported annually; therefore, in order to rectify this crying evil, to prevent our citizens from running away, and our National wealth from being exhausted, and to protect our home medical industry,

BE IT RESOLVED, Such M.D.'s should be entered upon the tariff list under the appropriate article, and be obliged to pay duty into the Custom-house of the United States in the sum of $1000 for each and every year of absence, or any part thereof. This fund shall be known as "Duty on those wanting to know too much," and said fund is to be divided, share and share alike, among those loyal subjects and faithful citizens who, having once got their medical degree, do not bother their heads about perfection, who are patriotic enough to stay where they are, prescribing ointments and powders, pills and capsules—in short, performing their duty to God and their fellowmen to the best of their knowledge.

Having finished reading the above remarkable document the Representative looked triumphantly upon his fellow law-makers.

"Protection"—continued the Representative—but this word fell like a blow upon my head, and I awoke. For quite a while I was stunned. What, thought I, I will have to pay $1000 when I go back? Heavens!

Whenever I think of that dream and my imaginary Representative, I cannot help finding in his words some grains of truth. The more I ponder over the "Whereases," the less ridiculous does his patriotism appear to my mind. The absurdity lies in the mode of solving the question—in his protective aspirations. Otherwise he is quite a sane man.

I have found that the American medical students in Europe can be divided into three groups: The first constitutes an insignificant minority. It is made up of those that go to Europe for the sake of the name alone. They roam all over Europe, they visit all the universities and café-chantants, they know all the names of the celebrities and of the bacilli, and they pronounce "prosit" in a pure German-kneipe way.

The second group is composed of elderly medical men—physicians who have been in practice several years. They came here either to refresh their memory, or to take a course in some special branch. Among them are a few who aspire to a professorship in some college. They are serious men, and know what they want.

The third group, the bulk of the American students, is composed of those who have just graduated. They have not had any experience, they do not aspire to professorships, they do not want anything especial—only the earth—of medical knowledge!

But what is there amiss at home that we are obliged to come to Europe? What is wanting there? Teachers? Not at all. Da Costa is as great as Gerhard, Price operates as well as Gusserow, Keen is as keen and daring as Bergmann, Pepper knows diseases of children as well as Henoch, and Weir Mitchell is not below Mendel. These are famous men of only one city—Philadelphia. Their number would reach hundreds if we would enumerate the great men of New York, Chicago, Cincinnati, Baltimore, etc. We may not have produced a Virchow, Koch, DuBois Reymond, etc. But Virchow does not give birth every nine months to a cellular theory, Koch is not pregnant all the time with new bacilli, and DuBois Reymond does not make a new discovery every day. All that they have discovered they have not patented—he who wants to know may learn it gratis. All that which we hear in the Berlin clinics we might as well have heard staying at home, and in a language more musical and comprehensible.

Wherein, then, doth the secret lie? I know that you divine what I am going to say: We have plenty of didactic lectures and very little of practical clinical work.

We boast of being an eminently practical people. "Let us see!" "Let us try!" "Prove it!"—are always on our lips. Medicine alone is our weak point; there we are all theory.

There are as many sick people in New York as in Berlin. There are in New York as many and as good hospitals as in Berlin. Why not deliver the same lectures at the bedside of the sick? Our children in the kindergartens are taught by the object method. Show us the sick man you talk about, and we will stay at home, otherwise we will go to Europe to see him. Build a pathological institute, and then talk of yellow liver atrophy; otherwise we will have to go to Europe for a

[1] Selections from a paper read by Dr. Charles D. Spivak before the American Medical Society of Berlin, in the auditorium of the Königliche Zahnärtztliche Akademie, February 4, 1892.

specimen. Erect a bacteriological institute, and we may believe that there are such vibrionic devils in existence. In Europe we see and cultivate them.

If anybody thinks that we need a Virchow to instruct us in pathology, he is mistaken. It is not the great men who instruct us here—you know this well—it is their assistants. And I can assure you that there are men in my own city who know as much pathology and bacteriology as the assistants of Virchow and Koch. They have no opportunity to apply their knowledge.

True, the recent inauguration of graded courses in all the respectable medical colleges, the splendid pathological institute in New York, the Johns Hopkins University—the future medical Mecca of the United States—show the dawn of a new era. But the progress is very slow. Conservatism is a noxious weed, difficult to root out. Look at our professors. They make flying trips to Europe almost every year. They see everything and everybody. They take back with them catgut, a new pessary, a pair of delivery forceps, a good-for-nothing obstetrical table; they tell us about the celebrities they have met, and they continue year in and year out their routine ways of instruction!

Before I close my paper let me appeal to you, gentlemen, that when you return home safely, well laden with practical knowledge, you should raise your voice in behalf of a new era of teaching. Some of you will rise in the profession, others will hold exalted positions, social or governmental, and a few will occupy chairs in colleges. For the sake of our profession do not forget the real motives of your visit to Europe. Do not compel your own pupils to seek for *practical* knowledge in some foreign land. Let the student be permeated with the atmosphere of the hospital and the laboratory. The ideal student of the future, in my opinion, will have to serve his apprenticeship as a nurse. The preceptorship of days gone by was better than many of the modern American medical schools.

Dr. Edward P. Davis, the editor of the *American Journal of the Medical Sciences*, writes to me:

"I quite agree with you in the contrast of methods of instruction in Europe and America; I think that the differences in government have much to do with it, as such institutes as you describe are subsidized in Europe by the Government, and can be supported in a way which is impossible in America."

Notwithstanding my personal dislike to any paternal Government, and my firm belief in the wisdom of keeping science apart from politics, yet if we cannot help ourselves in any other way—why, in the name of common sense, let us get money from the Government. Thank Heaven! there is always a little something saved up in the coffers of Uncle Sam.

Let me hope that you will do all in your power to further and develop the medical sciences in general, and aid in the speedy inauguration of wiser methods of teaching in our American medical schools in particular, and then the day will be nigh when we can exclaim:

"Three cheers for Home Industry from a medical point of view!"

Cocaine and Sulphonal.—It is announced that by an Imperial decree the employment of cocaine and sulphonal has been interdicted throughout the Turkish Empire.

CORRESPONDENCE.

"INFECTION" AND "CONTAGION."

To the Editor of THE MEDICAL NEWS,

SIR: I was much pleased when I took up the last number of THE MEDICAL NEWS, to see the title "'Infection' or 'Contagion?'—a Question of Definition," at the head of the editorial page, for certainly these terms are used very loosely, and whatever will give them a clearer definition will be of much practical value in classifying all discussion in which they are used. I only regret that I cannot wholly agree with you in your conclusions and recommendations. It is most certainly true, as you suggest, that it would be very desirable to have one generic word (for which you recommend zymotic), and let others be included within this, which shall apply to those diseases the *materies morbi* of which respectively are and are not carried by the atmosphere. And there is certainly no etymological objection to the use of the words that you suggest. But good usage is the arbiter of definitions, and if good and general usage sanctions a certain definition, it seems to me that it is unwise and conducive to the continuance of misunderstanding to urge any other definition, even though it be the more desirable. As regards "infection" and "contagion," these words as used by those who have occasion to employ them most frequently and with the most exactness, have, I have thought, acquired a very definite and much broader meaning than you would give them. Infection is very generally used in the sense given by Foster in his first definition, viz., "The act or process by which disease is set up in an organism by the implantation of morbific germs from without. . . . ." Thus the American Public Health Association has a standing committee on Preventive Inoculation in the Infectious Diseases, meaning thereby all diseases which were formerly included in the term zymotic. If I mistake not, this broad meaning of infectious is the one in which it is used by Sternberg, Welch, Prudden, Ernst, Gerster, Vaughan and Novy, and many other American sanitarians, bacteriologists, and chemists. Indeed *infectious* is used to include even more than the "germ" diseases, for it is applied by Leuckart to infection by trichinæ and other macroscopic parasites, and by Vaughan and Novy to diseases produced by ptomaïnes. Among English writers and in English laws infectious disease is commensurate with germ or zymotic disease, as may be instanced in writings of Sanderson, Klein, Simon, Newsholme, and Wynter Blyth. The like use is universal on the Continent, and the *Infectionskrankheiten* of the German Sanitary Bureau is even broader than "germ diseases," and is so used by Koch, Fraenkel, Hueppe, and indeed all German authors that I recall. Among the French, *maladies infectieuses* has about the same general meaning as *Infectionskrankheiten* among the Germans, and is employed in such a sense by Pasteur, Metschnikoff, Gamaleïa, Roux and Yersin.

Contagion is generally employed, by those whose usage I think should be authoritative, very nearly in accord with Foster's first definition, viz., "The communication of disease from one individual to another by means of direct or mediate contact. . . . This is

substantially Prudden's definition. So, too, when we ask, as so many have in the last score of years, "Is consumption contagious?" the desire is to know, not whether it is transmitted by contact, but whether its cause can be carried by the air or in *any* way.

The best and most general usage to-day defines *infection* as the poisoning of the body by living organisms or their products, and *contagion* as the transmission in any manner of the *materies morbi* from one living body to another.

This use is so general, that no matter how strongly it may meet with our disapproval, it seems to me the greatest aid we can give to clear writing is to conform to it. Respectfully yours,

CHARLES V. CHAPIN.

PROVIDENCE, R. I.

A FRAUD.[1]

To the Editor of THE MEDICAL NEWS,

SIR: In some of the American lay journals, especially in Cincinnati, the following misuse is made of the name of Virchow.

These journals contain an announcement that the great German physician, Dr. Karl Virchow Schiek, has just arrived from Germany and is prepared to give consultations. He claims to have made important discoveries in the germ treatment of chronic diseases, and that his prescription is used by 806 European physicians.

No physician of this name is to be found in any of the official registers of Berlin or Germany.

The intention of this man is evidently to mislead the great public by means of the name Virchow.

Yours very truly,

DR. S. GUTTMANN, M.D.,
Editor of *Deutsche med. Wochenschrift.*

BERLIN, February 11, 1892.

NEWS ITEMS.

A Public Sanatorium for Vienna for the Treatment of Pulmonary Diseases.—At the suggestion of Professor v. Schrötter, an association has been formed for the establishment of a sanatorium in the vicinity of Vienna for the treatment of indigent patients with pulmonary affections. Baron Rothschild has contributed one hundred thousand florins (forty-two thousand dollars) in aid of the movement.

Medico-Chirurgical College of Philadelphia.—The Chair of Obstetrics has become vacant through the resignation of Dr. E. E. Montgomery, who will hereafter devote himself entirely to the Chair of Gynecology.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Detroit Medical and Library Association for 1891. Detroit, Mich., 1891.

Tuberculin: the Value and Limitation of Its Use in Consumption. By Charles Denison, A.M., M.D. Reprint, 1891.

Elektrotherapeutische Studien. Von Dr. Arthur Sperling, of Berlin. Leipzig: Th. Grieben's Verlag (L. Fernau), 1892.

Trendelenburg's Posture in Gynecology. By Florian Krug, M.D. Reprint, 1891.

The Treatment of Lupus by Tuberculin. By P. G. Unna, M.D., of Hamburg. Reprint, 1891.

Medical and Surgical Gynecology. By S. Pozzi, M.D. Translated from the French Edition under the Supervision of, and with Additions by, Brooks H. Wells, M.D. Vol. I, with 305 Wood-engravings and 6 Full-page Plates in Colors. New York: William Wood & Co., 1891.

The Etiology, Pathology, and Treatment of Diseases of the Hip-joint. By Robert W. Lovett, M.D. Boston: G. H. Ellis, 1891.

Human Monstrosities. By Barton Cooke Hirst, M.D., and George A. Piersol, M.D. Part II, Illustrated with 13 Photographic Reproductions and 25 Woodcuts. Philadelphia: Lea Bros. & Co., 1892.

Tenth Annual Announcement and Catalogue of the St. Louis Post-Graduate School of Medicine, 1892.

A Statistical Review of the Proportion and Cause of Blindness, etc. By Howard F. Hansell, M.D., and James H. Bell, M.D. Reprint, 1892.

Impure Air and Ventilation of Private Dwellings. (The Orton Prize Essay.) By Howard Van Rensselaer, M.D. Reprint, 1891.

The Aseptic Closure of Long-standing Sinuses, etc. By H. Augustus Wilson, M.D. Reprint, 1891.

Report of a Case of Spina Bifida. By H. Augustus Wilson, M.D. Reprint, 1891.

Scope of Orthopedics, etc. By H. Augustus Wilson, M.D. Reprint, 1891.

The Library of the Medico-Chirurgical Society. Pamphlet, 1892.

On the Collection of Samples of Water for Bacteriological Analysis. By Wyatt Johnston, M.D. Reprint, 1892.

Pudendal Hematocele in the Non-puerperal State, with a Report of a Case. By E. Stuver, M.S., M.D. Reprint, 1892.

Practical Midwifery. A Hand-book of Treatment. By Edward Reynolds, M.D. Illustrated. New York: William Wood & Co., 1892.

The Tonsils in Health and Disease. By Harrison Allen, M.D. Reprint, 1892.

A Study of Mycosis Fungoides, with a Report of Two Cases. By Henry W. Stelwagon, M.D., Ph.D., and J. Leffingwell Hatch, M.D., F.R.M.S. Reprint, 1892.

The Weather and Climate—Clothing. By George Wilkinson, M.D. Reprint, 1892.

Formulaire Moderne. Par le Docteur R. Vaucaire. Préface de M. le Docteur Talamon. Paris: Rueff et Cie, Editeurs, 106 Boulevard Saint-Germain, 1892.

Lectures on Pathology, Delivered at the London Hospital. By the late Henry Gawen Sutton, M.B., F.R.C.P. Edited by Maurice Eden Paul, M.D., and Revised by Samuel Wilks, M.D., LL.D., F.R.S. Philadelphia: P. Blakiston, Son & Co., 1891.

Official Transactions of the National Association of Railway Surgeons, 1891. Illustrated with Portraits of the Officers of the Association and Others. Chicago, Ill.: Published by the Railway Age and Northwestern Railroader.

Additional Experiments to Determine the Lesion in Quinine-blindness. By G. E. de Schweinitz, M.D., with Photo-micrographic Studies by William M. Gray, M.D. Reprint, 1891.

Neuroma of the Right Upper Eyelid and Adjacent Temporal Region. By G. E. de Schweinitz, M.D. Reprint, 1891.

Living Larvæ in the Conjunctival Sac. By R. J. Phillips, M.D.

[1] Translation kindly furnished by Dr. Simon Baruch, of New York.

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THE MEDICAL NEWS.

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VOL. LX. SATURDAY, MARCH 19, 1892. NO. 12.

ORIGINAL ARTICLES.

EYE-STRAIN AND HEADACHE.

BY G. L. WALTON, M.D., AND C. F. CARTER, M.D.,
PHYSICIAN AND ASSISTANT PHYSICIAN IN THE NEUROLOGICAL DEPARTMENT OF THE MASSACHUSETTS GENERAL HOSPITAL.

THE statement in a recent editorial of the (Philadelphia) MEDICAL NEWS, that this subject has received practically no attention in Europe, and in this country only in a few cities, is undoubtedly a correct one. While the oculists and neurologists in this locality are taking up the subject with considerable seriousness, as evidenced not only in practice but in a recent contribution to the literature of the subject by Dr. Cheney (as well as in the discussion by the members of the Medico-Psychological Society, following the reading of this paper), the position of the general practitioner, taken as a whole, here as elsewhere, is probably not as yet so firmly established as experience would warrant.

In conversing upon the subject with other practitioners, we have met the usual criticisms that follow the expression of opinion in any comparatively new field. One states that the ground taken is a matter of common knowledge; the next, that it is overdrawn. In answer to the former criticism, we can only point to the literature, which certainly shows that if the knowledge of these subjects is common, its expression is singularly defective. In answer to the second criticism we have nothing to offer but facts, borne out by the everyday experience of the modern oculist, as well as to that of such neurologists as have subjected their cases to the investigation of these practitioners in preference to relying upon routine treatment by drugs.

It is a curious fact that among the causes of functional headache, and more particularly of migraine, elaborated in the various text-books and monographs, so little attention has been paid to this cause, which, in the estimation of the writers of this at least, plays a more important part than any other single factor—namely, extraneous irritation in the form of eye-strain. This is the more surprising in view of the fact that the item of etiology is generally dealt with in the text-books in a most exhaustive, though not always judicial manner; as an example of which we need only cite the disease locomotor ataxia, which is still accredited to sexual excess, exposure to cold, severe bodily and mental exertion, sudden fright and repeated anger, acute disease, as typhus, rheumatism, pneumonia and diphtheria, trauma, and tobacco, as well as to the one cause (we allude, of course, to specific disease) which can be traced in so large a proportion of cases as to render the question pertinent whether in point of fact 100 per cent. of genuine cases of the disease, after excluding Friedreich's disease, do not arise from this one poison.

It seems odd that among the long list of causes of migraine and cephalalgia, to which every collaborator adds, but from which few venture to deduct, that the one cause to which we have alluded has found so little place, scarcely more in some cases than cursory mention, in others none at all.

To cite a comparatively modern instance, the manner in which it is mentioned by Ross shows the usual lack of appreciation of the extent and character of the irritation produced by constant eye-strain. This author describes under the head of cephalalgia, the anemic, the hyperemic, the hysterical, the toxic, the febrile, the gouty, the rheumatic, the syphilitic, the neurasthenic, the organic, and the sympathetic headache, and devotes to migraine, on account of its great importance, a "separate and extended consideration." Under the causes of migraine, which is in reality one of the most common results of refractive error, this trouble is not mentioned; only under the head of "sympathetic headache" does he mention the subject of eye-strain, stating that it produces a form associated with vertigo and vomiting, referring to Weir Mitchell's article on the subject published in the *American Journal of the Medical Sciences*. The inference naturally drawn is that a certain variety of headache, of no considerable extent or importance, but characteristic in its form, results from eye-strain.

Gowers does not mention eye-strain in his otherwise exhaustive chapter on "Migraine," which he attributes to heredity, excessive brain-work, overfatigue, work in hot and crowded rooms, anemia, over-lactation, and (in one case) ague. The special treatment, he states, "consists first, in the continuous administration of drugs, and, second, the treatment of the attacks themselves"—not mentioning the necessity for the use of glasses at all. We should say rather that the first indication was to look for and to correct errors of refraction, only appealing to the continuous use of drugs as a last

resort. Certainly the patients who have tried the continuous use of drugs for years, and have finally been speedily relieved by the use of glasses, would give very decided testimony in favor of this order of procedure.

Under cephalalgia, Gowers states that a common cause of frontal neuralgic headache is the use of the eyes when there is hypermetropia, the pain going off when the use of the eyes for near work is discontinued. The misconception here is threefold—in the first place, the frontal neuralgic type of headache is by no means the only one produced by eye-strain; secondly, it is caused not only by near, but also by far work, as the action of the ciliary muscle is continuous in hypermetropia even in looking at distant objects; and, thirdly, far from disappearing when the use of the eyes is discontinued, such pain often first appears at this time. Occipital headaches are generally due, according to this author, to gastric disturbance, a point upon which we would also join issue, the pain from eye-strain being so often not only occipital, but extending down the back of the neck, that examination of the refraction seems to us in such cases indicated, rather than consideration of the digestion; and even where the latter is present, it may be secondary, as the editor of THE NEWS has pointed out, to eye-strain.

The experience of the writers, as tabulated further on, would show that after eliminating the organic, syphilitic, gouty, rheumatic, toxic, and febrile headaches described by Ross, Dr. Cheney's statement that at least half of the cases of functional cephalalgia met with in everyday practice, whether classified under anemia, hyperemia, hysteria, neurasthenia, or migraine, are curable by the adjustment of proper glasses, is by no means overestimated.

Clinicians are perhaps often thrown off the track by the statement of the patient that his eyesight is perfect, even sometimes remarkably clear. It has not infrequently happened in our experience that such patients have vision so acute for distance that they are called on by their friends to distinguish distant objects. The sufferer is in this case usually a hypermetrope, this form of refractive error being almost as potent as astigmatism in producing headache and other cerebral symptoms, on account of the constant though unrecognized effort of accommodation necessary to produce the acuity of vision which is the envy of his friends. The question of acuity of vision may, therefore, be absolutely excluded from consideration in deciding this question. It is, in fact, as Dr. Cheney has shown, often the cases in which the error of refraction is slight that cause the most trouble, as the moderate effort of accommodation here necessary to produce perfect vision is constant, whereas in cases of extreme error the effort is sometimes discontinued. It is, however, important to inquire whether there is blur before the eyes, or pain in the eyes after continued use, particularly by artificial light. It is also important to look for conjunctivitis and blepharitis, although these signs are not necessarily present. The question whether the headache occurs during or after excessive use of the eyes is also an important one to put, but the reply, if negative, is not to be too implicitly relied upon, partly because of the patient's inability to decide this point, and partly because the headache caused by eye-strain does not necessarily follow immediately upon such efforts as recognized by the patient. It may be pertinent to mention here the fact that individuals vary greatly in the amount of accommodative effort made in ordinary life, as in walking upon the street. The habit may be formed by the sufferer from astigmatism or hypermetropia of avoiding efforts at accommodation in reading distant sign-boards, telling the time at a distance, etc., by simply declining to make the effort. This habit persisted in will often relieve such a person from the necessity of wearing glasses continuously, provided he puts them on for each effort, no matter how brief, at accurate vision, as for reading or writing. For the average patient, however, it is safer to recommend the constant use of spectacles.

This variety of frame should be insisted upon at least in cases of astigmatism, if we are to do justice to the patient and ourselves; for a slight deviation of the axis may only add to, instead of relieving the irregular spasm of the ciliary muscle. This fact, added to the unnatural pressure of eyeglasses (often ill-borne) may render our endeavors futile, and lead to the supposition that the effect of eye-strain has been overestimated. It is in the majority of cases wiser, therefore, to advise the use of spectacles constantly, at least until the connection with the eye-strain is established, after which the patient, if he chooses to experiment with eyeglasses or with leaving off glasses in the street, may do so upon his own responsibility. In point of fact, however, many patients, more particularly female patients, will choose to try this experiment first, whatever is advised, and only adopt the proper course, if at all, later.

In the theater, particularly, it is important that glasses should be worn by the class of patients under consideration, the long-continued effort here necessary at accurate distant vision, by artificial light, being probably frequently the cause of the headache commonly attributed to late hours or late supper.

It is a noteworthy fact that the statement not infrequently appears in the text-books that headaches

are liable to disappear at the age of from forty-five to fifty-five, the true reason for this disappearance not being recognized, the cause being in point of fact in the majority of these cases, that the power of accommodation is lost at this age, as has been dwelt upon by Dr. Cheney in the article already quoted. The same observer points out that the usual period of onset of such headaches, namely, at the age of from twelve to seventeen years, is due to the fact that in childhood the power of accommodation is so great as to make the effort for accurate vision comparatively easy, and partly to the fact that such vision is not called for until hard study is begun. The trouble may, however, begin even in childhood, especially if the child is studious.

The experience of the writers of this paper does not bear out the statement of Ross that headache from eye-strain is particularly liable to be accompanied by vertigo and vomiting, though it may be so, nor do we recognize any constant type of headache as resulting from eye-strain, though migraine has been perhaps as frequent as any form. We have found the headache more frequently, however, beginning in the frontal and occipital regions than in the vertex or temporal regions, though all these points become involved, of course, in migraine, a form of headache in which the error of refraction is generally found to predominate on one side, or to be (in case of astigmatism) in different axes.

Ranny should certainly be given credit for his persistence in impressing eye-strain upon his readers as a cause, not only of other reflex symptoms, but also of typical migraine, which he considers invariably due to error of refraction or to insufficiency of the ocular muscles. It is perhaps the extreme character of this view that has defeated its adoption, but it is probably nearer the truth than the view that this factor need not be mentioned at all in the etiology of migraine or considered in its treatment. It would certainly be wiser to advise careful ocular examination, if necessary under a mydriatic, in the case of every sufferer than to neglect it in one case in which the use of proper glasses would give relief.

In our own practice, after eliminating syphilis, toxic influences, and organic brain-disease, an ophthalmologic investigation is the first thought that suggests itself in every case of long-standing headache, and the result has generally more than justified the investigation.

We have formulated sixty consecutive cases that we have seen in private practice, from the majority of which we have been able to ascertain the history after the use of glasses. The majority of the cases were examined either by Dr. Bradford or by Dr. Cheney; several by Drs. Wadsworth, Derby, and Chandler. The predominating refractive error was astigmatism.

The results are as follows:

Relieved	37
Relieved in a measure	5
No relief	3
Doubtful	2
No record	6
Oculist not consulted	7
	60

Among the three cases unrelieved is one in which the oculist discovered no error worthy of correction.

Three cases selected as types will serve to show the prevailing character and severity of the headache relieved by appropriate ocular treatment. It seems hardly necessary to prolong the list further.

CASE I.—A hotel clerk, about thirty-eight years old, had been troubled with severe headaches for many years, commencing in the frontal region, sometimes right, sometimes left, and extending to the occipital region. He had blurred vision at times. The attacks were frequently accompanied by nausea and vomiting, and made it impossible for him to attend to his duties for several hours. His eyes were examined by Dr. Bradford and glasses prescribed as follows:

O. U. + 0.50 S. ◯ + 0.50. cyl. ax. 0°.

Nearly two years have elapsed since he began wearing them, and during this time he says he has never suffered from headache.

CASE II.—A physician, thirty years old, had suffered with frequent headaches, generally frontal, left, ever since early childhood. These finally occurred two or three times weekly, and were not relieved by any of the usual remedies, such as phenacetin, antipyrin, etc. In the spring of 1889, Dr. Cheney examined his eyes, having first paralyzed the accommodation with homatropine. The following glasses were prescribed:

O. D. + 0.50 cyl. ax. 105°.
O. S. + 0.225 S. ◯ + 0.50 cyl. ax. 80°.

Since putting on the glasses he has had no headaches, although when he attempts to read without glasses he quickly begins to have shooting pains in the left eye and forehead.

CASE III.—A physician, aged thirty-eight, had severe and frequent headaches from the age of ten, generally unilateral, commencing in the frontal region, lasting from twelve to twenty-four hours, sometimes accompanied by vomiting, generally preceded by blurring, the latter sometimes limited to half the field of vision, the line of demarcation on one occasion being horizontal and clearly defined (exceptional). Headaches were very rare and comparatively mild since he began wearing glasses, except on one occasion after inversion of the left glass by a mistake of the optician. The statement of refractive error is taken from Dr. Bradford's notes:

O. D. = 0.8 *c* — 1.50 cyl. ax. 90°.

Eye is also myopic — 0.25, but the addition of — 0.25 causes quite severe strain.

O. S. = 0.8 *c* — 1. sp. ◯ — 0.75 cyl. ax. 45°.

The whole amount of myopia (— 1) causes much discomfort. Can bear — 0.50.

Exact refraction:

O. D. = 0.8 *c* — 0.25 sp. ⌒ — 1.50 cyl. ax. 95°.
O. S. = 0.8 *c* — 1. sp. ⌒ — 0.75 cyl. ax. 45°.

Owing to inability to use the whole amount of myopic portion of glass, the following was ordered:

O. D. — 1.5 cyl. ax. 95°.
O. S. — 0.50 sp. ⌒ — 0.75 cyl. ax. 45°.

We would not be considered enthusiasts, who, generalizing from a few cases, formulate a theory to cover all. On the contrary, we recognize all the other sources of headache enumerated in the text-books.

It must be recognized, also, that in these cases, as in all functional nervous diseases, more than one factor may be at work, all of which must be combated if perfect recovery is hoped for. An illustration of this fact is furnished by a case referred to one of us not long ago by Dr. Derby. This was in a young lady of twenty-one, who for about five years had suffered from headaches, frontal and occipital, so frequent and severe as to preclude the possibility of continuing her accustomed employment. The error of refraction had been corrected as far as possible, and some relief had thus been afforded, but the headaches persisted with a frequency of about three weekly. The patient was quite anemic, and was put upon the saccharated oxide of iron and phenacetin as required, with general directions regarding rest, exercise, and diet. Rapid improvement followed, and at the end of two months the headaches had become so infrequent, and her general health so far restored, that she was able to discontinue treatment. She only complained at that time of frontal headache of comparatively short duration and coming on only after excessive use of the eyes. At least two elements were certainly, therefore, at work in this case. It is probable that the general treatment would have proved comparatively fruitless, however, without previous correction of the refractive error, and the order of treatment adopted seems to us the rational one in such cases. This case of mixed etiology may seem an unfortunate one in this connection, especially in that the cure was not complete. We mention it, however, to show that the problem is not always a simple one, and as regards recovery, when such a delicate matter as the subsidence of a long-standing ciliary spasm is under consideration, it would be far too optimistic to expect absolute freedom from headache after the adjustment of glasses, even when the etiology is obvious; nor should the theory of eye-strain as the frequent cause of cephalalgia be challenged on these grounds, as Dr. Cheney has already pointed out.

In conclusion we would emphasize these points:

1. A large proportion of cases of functional cephalalgia, and especially migraine, is due wholly or in part to eye-strain.

2. Good vision is not inconsistent with such difficulty.

3. When practicable very slight errors of refraction should be corrected in cases of cephalalgia as well as in others with functional nervous symptoms.

ARE DIPHTHERIA AND TYPHOID FEVER FILTH-DISEASES?

By CHARLES V. CHAPIN, M.D.,
of Providence, R. I.

When, half a century ago, it began to be recognized that many diseases of an infectious and contagious nature prevailed most extensively in the midst of filthy surroundings, the doctrine of the danger of filth was preached vigorously by both physicians and laymen. This propaganda of cleanliness has been productive of so many true sanitary improvements, and throughout civilized countries has so immensely improved the comfort and decency particularly of the wage-earning class, that it has proved itself no mean factor in the civilizing influences of the age. The causative relation of filth to disease is a theory based in the first instance, it is to be feared, on the too careless inference drawn from data not sufficiently investigated and understood. That there is truth, and valuable truth, in the theory, is not to be gainsaid; but that it has often been pushed beyond all reasonable limits by its advocates must also be admitted. Our medical knowledge is a growing plant, which, while expanding in every direction, constantly needs the pruning both of its dead and its too luxuriant branches. There is usually somewhat of truth and somewhat of untruth in all the conclusions that are arrived at as the result of scientific investigation. Thus in the case of the filth-causation of disease, it is certainly true that the specific contagium of typhoid fever and cholera are contained in the evacuations of the sick, and that water and soil receiving even an infinitesimal amount of such evacuations become the storehouses and carriers of the poison. Here filth, and filth in its most offensive form, becomes the true cause of disease. But we are not warranted, therefore, in assuming that every case of typhoid fever or cholera must have its source in some vault, or cesspool, or polluted well, or that every collection of decomposing and filthy material is likely to cause these diseases. The rise of the germ-theory, when it was merely a theory, did much to strengthen popular and professional belief in filth-diseases. If filth is teeming with microörganisms, and these organisms are the causes of the infectious diseases, the best way,

and a sure way, to prevent these diseases is to get rid of all forms of filth. If a single germ, by its rapid reproduction, is capable of giving rise to a case of sickness, and if these germs can be borne on the slightest breath of air, a pin-hole opening in a sewer-pipe may be, nay, must be, a fatal opening into our dwellings for the ingress of the seeds of disease. But the labors of the bacteriologist have raised many of the propositions of the germ-theory to the realms of actual knowledge, and at the same time have shown many of the deductions of this theory to be false and misleading. Though there is plenty yet to learn, we now know enough to correct many of our former guesses. Thus we know that not all germs are pathogenic. In fact, the great majority are not, and this is particularly true of those found in decomposing material, *i. e.*, filth. In many cases, indeed, putrefactive organisms are directly hostile to the development of the pathogenic, and quickly choke them out. Thus the human alimentary tract contains countless swarms of such harmless forms. It is not filth in the sense of dead and decaying organic matter which is dangerous, but only such matter when it is the seat of growth of specific pathogenic organisms. It has also been demonstrated by inoculation-experiments on animals that the likelihood of a single microorganism, or even a moderate number of them, setting up disease, is extremely small. Practically, it is found that it requires considerable masses of organisms to insure infection, and such masses are not readily carried about in the air. Recent progress in aseptic surgery has shown that the excessive fear of aërial infection—the great bugbear of the originators of antiseptic surgery—was unfounded.

We now know, too, that microörganisms are not readily given off from moist surfaces, and that the air of drain-pipes, sewers, and cesspools usually contains a much smaller number of microbes than the air of our streets and dwellings. While "sewer air" cannot be as healthful as outdoor air, and its inhalation may produce certain constitutional and local symptoms, it certainly is not in itself the cause of infectious disease. Unless the current escaping from a leaky pipe is strong enough to carry off particles of liquid with contained organisms, it cannot be the carrier of contagion. It is extremely improbable that a small opening in a soil-pipe or drain can be the source of infectious germ-disease, even if the drain itself be infected.

Until a very recent time cholera, typhoid fever, the diarrheal diseases, diphtheria, and even malaria, scarlet fever, and smallpox, were supposed to be caused chiefly, if not solely, by filth, pure and simple. While clinical evidence has, indeed, made clear to most that diseases like scarlet fever and smallpox are probably spread by immediate contagion chiefly, yet diphtheria and typhoid fever are still commonly attributed to filth. Thus, in the last two two years, the health officers of the various towns in Michigan, in reporting outbreaks of infectious disease to the State Board of Health, found "filth," as popularly understood, the etiologic factor in the following instances: Of 251 outbreaks of diphtheria, in which the health-officer was confident enough to state the source of the disease, it was attributed to "unsanitary surroundings" in 74. In 176 outbreaks of typhoid fever in which the cause was supposed to be determined, it was attributed to filth and bad water in 76. These 76 did not include those instances in which the water was known or supposed to be specifically polluted by typhoid stools. Even 6 of 194 outbreaks of scarlet fever were attributed to filth. Nothing is more common than to have not only laymen, but also educated physicians, attempt to trace every case of diphtheria or typhoid fever to a defective water-closet, a broken drain-pipe, or a neighboring privy-vault. And nothing is more common, when such unsanitary conditions are found, than to hear exclamations of surprise that typhoid fever or diphtheria has not resulted from them. I do not by any means wish to affirm that filth is never the cause of disease, or that it is not always desirable to get rid of it if possible, nor would I belittle the work of the apostles of cleanliness who have done so much for the comfort and health of mankind. What I wish to do is to inquire whether the relation between the two diseases mentioned—diphtheria and typhoid fever—and filth is as close as is generally supposed. By limiting the agency of filth as a cause of disease to its true field, even if we do narrow it, we are aiding rather than retarding the gospel of cleanliness.

One way of determining whether the two diseases specially mentioned are caused by filth and unsanitary conditions is to find in what proportion of cases of these diseases such conditions are found in the house, and also in what proportion they are found in houses generally in the same locality. If, where typhoid fever and diphtheria are found, bad sanitation is much more prevalent than in other dwellings near by, we would have good reason for suspecting a causative relation. But if not, we would be required to seek very strong evidence elsewhere to show that these are filth-diseases. I have no data at hand for just this comparison, but I can compare houses in which diphtheria and typhoid fever occur with those in which scarlet fever occurs. As there is no evidence whatever of any relation between scarlet fever and filth, or "sewer gas," this comparison is of much value, for if we find unsanitary conditions no more numerous in typhoid and diphtheria houses than in scarlet-fever houses, we shall have on this

ground at least no reason for considering the former any more filth-diseases than the latter, and that is no reason at all. The following tables show the result of inspections of the premises where scarlet fever, diphtheria, and typhoid fever have occurred in Providence, R. I., during the last seven years. These diseases have been so evenly scattered over the city that no error can arise from one set of houses being in one section and one in another:

Results of the Examination of Premises in Cases of Contagious Diseases.

Scarlet Fever.

Year.	Vaults full.	Cesspools full.	Yards filthy.	Untrapped sinks.	Defective waste-pipes and drains.	Filthy cellars.	No nuisance.	Total.
1885	23	11	14	113	56	20	32	269
1886	16	4	4	101	61	4	45	235
1887	70	9	14	232	88	5	247	665
1888	14	3	9	42	34	3	128	233
1889	4	4	...	42	9	...	51	110
1890	4	2	...	19	4	...	56	85
1891	14	3	3	57	17	2	157	253
Total	145	36	44	606	269	34	716	1850

Diphtheria.

Year.	Vaults full.	Cesspools full.	Yards filthy.	Untrapped sinks.	Defective waste-pipes and drains.	Filthy cellars.	No nuisance	Total.
1885	8	3	4	33	20	4	28	100
1886	24	4	3	97	55	2	86	271
1887	25	5	2	112	49	4	87	284
1888	20	2	7	80	32	4	92	237
1889	16	7	4	68	27	6	89	217
1890	17	1	3	52	28	...	102	203
1891	10	3	5	42	10	2	81	153
Total	120	25	28	484	221	22	565	1465

Typhoid Fever.

Year.	Vaults full.	Cesspools full.	Yards filthy.	Untrapped sinks.	Defective waste-pipes and drains.	Filthy cellars.	No nuisance.	Total.
1885	10	3	5	39	28	3	12	100
1886	25	3	6	57	32	4	26	153
1887	10	1	2	27	9	1	21	71
1888	29	9	11	163	51	13	154	430
1889	9	3	1	61	21	3	96	194
1890	13	5	...	27	11	...	46	102
1891	11	1	6	46	20	...	111	195
Total	107	25	31	420	172	24	466	1245

It will be seen that as regards unsanitary conditions there is practically no difference between these diseases. Thus, untrapped sinks and defective sink-pipes and drains were found in 47.3 per cent. of the houses examined in which there was scarlet fever; in 48.1 per cent. in which there was diphtheria; and in 47.6 per cent. in which there was typhoid fever. As regards privy-vaults, cesspools, and yards, nuisances were found in 12.2 per cent. of houses with scarlet fever; in 12.5 per cent. with diphtheria; and in 13.1 per cent. with typhoid fever.

There is another point worthy of notice, which indicates that diphtheria should be classed not as a filth-disease, but rather with scarlet fever as a disease caused by contagion borne from one person to another. When scarlet fever occurs in a house, the statistics of Providence show that it tends to spread from the family first attacked to others in the same house in 14.8 per cent. of the cases, and in diphtheria in 15 2 per cent. Here again the difference is too small to be of importance. As in most cases untrapped sinks, defective waste-pipes, and neighboring privy-vaults affect both tenements alike (most houses in Providence are two and one-half stories, with two tenements), we should expect to find the disease in both tenements in more than this proportion of cases if it were dependent on such conditions.

When, as health-officer, I began the study of diphtheria I was inclined to believe, as I had been taught, that it was caused in many, if not most, cases by filth; but as I have followed the natural history of the disease as it has occurred in Providence, my belief in this cause has grown less and less, and my belief in direct contagion stronger and stronger. Study of the cases shows that, as a rule to which there are not many exceptions, it appears first in a single member of a family. After that, others in the same family are taken sick at varying intervals, and in a certain proportion of cases it is afterward reported from other families in the same house. About one-half the children exposed to this disease contract it—almost exactly the same proportion as in scarlet fever. In fact, as regards contagiousness, it acts almost precisely as does scarlet fever, and the reasons for thinking the latter always contagious and never obtaining a foothold for growth outside of the body are of as much force in regard to diphtheria. On the opposite page is a tabulation of some of these facts. The data for diphtheria do not cover so long a period as those for scarlet fever, but, as about the same ratio holds for individual years, this is of little moment.

The bacteriologists have determined that true diphtheria is caused by Löffler's bacillus, and we know that this organism not only retains its vitality

SCARLET FEVER.

	1887	1888	1889	1890	1891	Total.
Number of families in which there was more than one susceptible child	232	244	73	66	198	813
Number of families in which there was a second case	130	147	30	27	78	412
Number of susceptible children in all of the tabulated families	986	827	242	215	605	2875
Number of these children who were attacked	452	511	126	105	341	1535
Number of additional families with susceptible children in the house in which the disease appeared	112	128	18	15	98	371
Number of susceptible children in these families	381	354	34	30	238	1037
Number of these additional families attacked	27	16	0	2	10	55
Number of children in these families attacked	58	21	0	2	12	93
Number of instances in which susceptible children were at once removed	24	18	10	9	27	88
Number of instances in which they were attacked on their return	3	1	0	0	0	4

DIPHTHERIA.

	1889	1890	1891	Total.
Number of families in which there was more than one child	121	112	102	335
Number of families in which there was more than one case	47	42	37	126
Number of children in all of the tabulated families	472	422	356	1250
Number of these children who were attacked	231	191	164	586
Number of additional families with children in the same house	38	59	41	138
Number of children in these families	95	167	89	351
Number of these additional families attacked	7	11	3	21
Number of children in these families attacked	11	14	7	32
Number of children who were at once removed	26	28	26	80
Number of instances in which they were attacked on their return	0	2	0	2

for some time outside the body, thus favoring contagion, but that it can propagate itself, under favorable conditions, outside the body. We must therefore admit that dead organic matter or filth may be the source of this disease, but bacteriology and clinical evidence indicate that it is not usually so.

Typhoid fever, like diphtheria, is known to be due to a bacillus, the life-history of which has been pretty fully worked out. This organism can certainly develop outside the body, but it does not readily do so, being choked out by other forms of microbes. It is rarely found except in places which have recently been contaminated by typhoid excreta. The reasons which forbid our attributing diphtheria to the escape of sewer-air are equally good as applied to typhoid fever, and we are confronted with an additional fact that there is almost no good evidence to show that typhoid is caused by aërial infection. If it is, it must be only very rarely. It is generally, if not always, the food and drink which are the media of infection.

The tables of the results of the inspection of houses in which typhoid fever existed, as already given, are confirmatory of the view that this disease cannot be traced to defective plumbing or drainage; and they furthermore show that in the majority of cases it cannot rightfully be attributed to filthy surroundings. It has been pretty clearly proven that in a large proportion of cases typhoid fever is caused by the use of water contaminated by typhoid stools. In cities that have a public water-supply secure from such contamination, typhoid is quite rare as compared with localities dependent on wells, which necessarily offer exceptional opportunities for defilement. In cities the cases of typhoid fever that are not traceable to the water-supply seem to me likely to be caused chiefly in two ways: The disease-germs may be brought in from the country in food, as in milk, or in vegetables that are eaten uncooked, as celery, lettuce, radishes, etc. Or, perhaps, in the greater number of cases the infection may be somewhat as follows. It undoubtedly happens quite often that the discharges or the washings from soiled linen of a typhoid-fever patient are thrown into the yard or on to some refuse heap. Here the bacilli may grow for a time, and in any event, if the material becomes dry, as it often must, it may be blown away and be carried considerable distances by the wind. It is, of course, not unreasonable to suppose that food may thus be contaminated by this aërial infection. If this is a true explanation, we can say that typhoid fever is so far a filth-disease; but we must not, therefore, look for its source in the immediate surroundings. A local cleaning would not be much of a preventive, though a general removal of useless organic matter from a town or city would be.

It seems to me that diphtheria and typhoid fever are not filth-diseases, in the sense in which the public understands that term, except in a very limited

degree. Diphtheria is almost always due to contagion, though perhaps occasionally to the growth of its specific organism outside the body.

Typhoid fever is more often traced to filth in which its living cause, the bacillus of Eberth, has been growing, but usually the filth is the feces, and these are merely the carriers of the contagion. There is little or no evidence that a person contracts this disease by breathing infected air. The way of infection is by the alimentary tract.

There is little or no clinical evidence that favors, and much both clinical and theoretic that disproves, the view that sewer-air, except in rare instances, is the bearer of the infection, either of diphtheria or of typhoid fever.

TUBERCULOUS PERITONITIS FROM A SURGICAL STANDPOINT.[1]

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There is no longer any doubt that the operation of opening the abdomen, washing out and draining the cavity, is justifiable in cases of ascites not the result of disease of the liver or of the kidney, and otherwise incurable. It is also equally true that in a certain number of cases this procedure has been followed by permanent cure. But it does not follow that all cases of tuberculous peritonitis should be operated upon. The class of cases of which I shall report four does not offer a brilliant field for the operative surgeon, though much may be accomplished by exploratory incision.

The following are the varieties of the tuberculous diseases of the peritoneum:

1. Miliary tuberculosis, with ascites.
2. Tuberculous infiltration of the omentum, forming one or more masses.
3. Tuberculous degeneration of the mesenteric glands, with a matted condition of the bowel, the result of the extension of the inflammation.
4. Tuberculous infiltration of the mesenteric glands, resulting in the formation of a large tumor.
5. Abscesses of the abdominal walls, of tuberculous origin.

The causes of tuberculous disease of the peritoneum may be any of the following:

1. Part of tuberculous affections of serous membranes in general.
2. Infection from neighboring tuberculous organs, as tuberculous ulceration of the intestines, tuberculous inflammation of the glands.
3. Part of a general miliary tuberculosis, when there are no localizing symptoms.
4. Infection through the uterine appendages.

Diagnosis. The following points are to be closely observed: Family history; appearance of the individual; previous tuberculous manifestations, if any; coëxisting tuberculosis (lungs and pleura).

In the course of tuberculous disease of the peritoneum, it is not uncommon to see intestinal obstruction caused by distortions and flexions of the intestines.

When the bowel, matted together by extra-intestinal bands of tuberculous material, constitutes a mass perceptible through the abdominal walls, the size and shape of the tumor may alter remarkably within a very short time.

A mass of large size may cause pressure-symptoms, such as dysuria, icterus, dyspnea, displacement of organs, enlargement of the superficial vessels, etc.

The ascitic fluid in tuberculous peritonitis is very frequently bloody, and blood may be poured out in such a quantity as to cause all the symptoms of severe intestinal hemorrhage.

The terminations of tuberculous masses in the omentum are by absorption, and by the formation of an abscess, in connection with which there may be a fecal fistula. This abscess may also perforate the gut and be evacuated in that manner.

The report of the following cases may serve to illustrate some of the foregoing points:

Case I.—Mrs. U. V., white, forty-eight years of age, was admitted to the German Hospital, September 3, 1889, with her abdomen much enlarged. She had a family history of tuberculous disease. The present trouble, of some months' standing, commenced with pain in the abdomen, which was at first severe in character, but since the abdomen had commenced to enlarge it had been less severe. Physical examination showed the cavity distended with fluid. Examination of the chest and urine was negative.

Prolonged medical treatment having proved of no effect, I opened the abdomen in the middle line and evacuated a large quantity of bloody liquid. Both the parietal and visceral layers of the peritoneum were studded with miliary tubercles. The abdominal cavity was washed out thoroughly with warm distilled water and drained. The patient was discharged cured December 6, 1889. The cure was practically brought about at the end of five weeks after the operation, but in order to see if there were any tendency to a recurrence of the dropsy, she was detained in the hospital until the date of her discharge.

Case II.—J. R., thirty-eight years of age, was admitted to the German Hospital with a history of two sisters having died of pulmonary tuberculosis. There was no other discoverable hereditary taint. One year and a half before admission he received a heavy blow in the right iliac region, and this was followed by pain and tenderness lasting for many months. Six months before, he had had acute peritonitis, and one month after recovery from this, a second attack followed.

[1] Read before the Philadelphia Academy of Surgery, March 7, 1892.

Six weeks before admission he was seized with severe colicky pains in the abdomen; these, with tenderness in the iliac region, persisted until the case was treated surgically. He has always been somewhat constipated. He had no history of caseating cervical glands or of other tuberculous manifestations.

The patient on admission was emaciated and anemic, and complained of severe paroxysmal pain in the umbilical and right iliac regions, the abdomen being distended and tympanitic, the bowels confined. Physical examination disclosed a fluctuating tumor above and to the left of the umbilicus, the surrounding structures being prominent and reddened. There was no demonstable tuberculous disease of the pleura or of the lungs. A small quantity of pus escaped from an opening below the umbilicus.

The patient's abdomen was smeared with belladonna and mercury ointment, and he was tentatively treated for some time with alteratives and laxatives. The bowels moved freely, but the subjective symptoms did not lessen in severity, nor did the lumps in the abdomen diminish in size.

It was decided to explore both the fluctuating tumor above the right groin, and the abdominal cavity above the umbilicus, near the site of the non-fluctuating mass. Incision into the swelling above the groin evacuated a small quantity of cheesy pus contained between the transversalis muscle and the transversalis fascia. The wound was packed with iodoform gauze. Incision through the linea alba into the abdominal cavity above the umbilicus evacuated a puriform liquid from a cavity between the posterior layer of the sheath of the left rectus muscle and the transversalis fascia, and revealed a growth of considerable size involving the great omentum. It being impracticable to remove this infiltrated tissue, the wound was packed with iodoform gauze, the gauze in this instance being placed in direct contact with the coats of the intestines, since the edges of the parietal peritoneum could not be approximated.

Since the operation the patient has steadily regained flesh and strength, and the new-formed tissues have been entirely absorbed. He was discharged six weeks after the operation, cured.

Case III.—Frank K., white, twenty-eight years of age, referred to me by Dr. C. Marshall, had been suddenly seized with colicky pain that had persisted for six weeks before his admission to the German Hospital. He could give no family or previous personal history of tuberculosis. He had never suffered from severe constipation, but his bowels had always been somewhat confined. The abdomen was hyper-resonant, except in the right hypochondrium, where there was distinct dulness. Palpation revealed a fixed, regularly nodulated tumor, extending to the right as far as the median line; below to one inch beneath the level of the umbilicus; and above to within one inch of the lower border of the tenth rib; its left border was undefined and apparently more deeply seated than the other portions of the growth. There was no ascites, and the contents of the thoracic cavity were normal. The patient was markedly anemic, and had lately lost several pounds in weight. His temperature was constantly somewhat elevated. The growth varied considerably in size and shape from day to day, a peculiarity explained by Goodhart by the fact that these masses usually consist of intestines matted together by intestinal bands of tuberculous material.

The patient's grave condition improved somewhat during his stay in the hospital. He would not consent to an operation. I believed the growth to be tuberculous. I advised an exploratory laparotomy for a twofold purpose: first, to determine definitely if the mass was matted bowel or omentum. If the former, I proposed to attempt to separate the adherent coils, irrigate, and drain; and if the latter, I hoped, if feasible, to remove the mass.

On January 2, 1892, the case was again admitted to the hospital, willing now to be operated upon, because while away he had grown much worse. Laparotomy was performed, and after the escape of several ounces of milky fluid there was seen a nodulated growth involving the spinal attachment of almost the entire mesentery. A nodule at one point of the growth presented a decidedly yellow appearance, suggesting commencing degeneration. The intestines were intact. From the size and situation of the growth, removal was not attempted. The abdominal cavity was thoroughly irrigated with warm distilled water and drained. Drainage was kept up for two weeks until there was no longer any discharge. The fluid drained off for the first two or three days was like that evacuated at the time of the operation, namely, milky, and apparently largely composed of chyle. An examination of the fluid did not determine definitely the presence of chyle. After the third day the discharge was lighter in color, and so continued until it ceased to flow. Death from exhaustion occurred on February 8, 1892.

An autopsy permitted upon the abdominal cavity showed only a large quantity of milky fluid, and the tumor (mesenteric) I here exhibit. The peritoneum was much injected and thickened.

Case IV.—Willie C., white, seven years of age, referred to me by Dr. J. V. Kelley, of Manayunk, was always an unusually healthy child until one year ago. He had never shown any personal manifestations of tuberculosis, but presented a somewhat significant family history, his maternal grandmother having died of pulmonary tuberculosis. His illness began with a contusion of the abdomen received while sledding. He subsequently complained of severe pain about the umbilicus. His parents could discover no local lesion, and thought he was malingering to escape going to school. His distress, however, became so unfeigned and severe that Dr. J. V. Kelley was called in, and he at once discovered a mass in the abdomen near the navel. Poultices were applied for some months, and although the little patient was still able to play about as before, he continued to complain of pain. The tumor remained stationary until four months ago, when pointing occurred at the umbilicus, and a considerable abscess discharged itself. A purulent discharge has since persisted, which one month ago became distinctly fecal in character. Since the appearance of feces

at the umbilicus the boy has progressively lost flesh and strength; a chronic diarrhea has set in, the stools being illy formed, dark, and excessively offensive. A doughy non-sensitive mass is still demonstrable in the umbilical region.

There is no reason why local tuberculous deposits, if they can be made out, and are in a convenient situation for operation, should not be removed before the trouble becomes general.

In suppurative cases, when the pus is confined, laparotomy should at once be performed, the abscess-cavity opened, washed out, and drained.

Case I was one of miliary tuberculosis of the peritoneum, with ascites.

Case II was an example of abscess of the abdominal walls associated with a tuberculous tumor of the great omentum. The operation of laparotomy served to evacuate the pus, which occupied the transversalis fascia, and which had evidently found its way thither from the omental mass. Packing the wound with iodoform gauze both medicated as well as drained the peritoneum at the most pronounced seat of the disease. Owing to the extensive adhesions, I did not think it prudent even to attempt to remove the omental tumor.

Case III was one of tuberculous disease of the mesenteric glands in its early stage.

Case IV was one of tuberculous infiltration of the omentum, terminating in suppuration, with bowel-involvement (fecal fistula). Here operative measures are contra-indicated.

To Dr. J. C. Heard, my resident surgeon at the German Hospital, I am indebted for the notes of the cases reported, and for his care of the patients.

HEMORRHAGE INTO THE CORD, WITH REPORT OF A PROBABLE CASE.[1]

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IN speaking of hemorrhage of the spinal cord it is necessary to distinguish between hemorrhage into the membranes and hemorrhage into the substance of the cord itself. The former—meningeal hemorrhage—is more frequent, and may be either extra-dural or sub-dural. The latter variety—hemorrhage into the substance of the cord—is the one that forms the subject of this paper.

So rare is hemorrhage into the cord, and so few have been the post-mortem examinations, that many neurologists deny the existence of such a condition. Charcot, among others, holds that primary hemorrhage is rarely, if ever, encountered, and that there is always a preëxisting inflammation, so that what has been called hemorrhage is really a very acute hemorrhagic myelitis. While undoubtedly many of the cases reported as primary hemorrhage were in reality cases of myelitis, still there have been a few cases, completed by autopsy, that would seem almost conclusive. One great difficulty is that in most of the cases that have come to autopsy the patients have lived long enough to allow a myelitis to supervene upon the extravasation of blood—a necessary consequence when we consider the proneness of the cord to inflammation. Throwing out, then, the doubtful ones, we still have enough cases, it seems to me, to fix hemorrhage into the cord as a pathologic entity.

It is not an easy matter to explain why hemorrhage into the cord should be so vastly more infrequent than hemorrhage into the brain. The only explanation that can be given is that the arteries that supply the spinal cord have, generally speaking, a long and tortuous course, and are not so liable to feel changes in blood-pressure as are the shorter and more direct cerebral vessels. The branches from the vertebrals and the branches from the intercostal and lumbar arteries are, for example, far less exposed to the risk of rupture than the middle cerebral, because they are not in the line of force, as is the cerebral. Most observers have denied the existence of aneurismal dilatations of the spinal arteries, so common in the cerebral vessels. There would seem, then, to be no predisposing cause, such as we have in cerebral hemorrhage.

In considering the general etiology, the data are yet too few and uncertain to allow any very certain conclusions to be drawn. We leave out, of course, that most common cause—traumatism—since we are speaking of idiopathic hemorrhage. Violent exertion, sexual excess, certain fevers, as smallpox, typhus, and typhoid; scurvy, tetanus, convulsions, strychnine, alcoholism, suppression of the menses—these are some of the causes that have been thought to have more or less influence in bringing about the condition. The blood may appear as minute points, scattered mainly in the gray matter, since this part of the cord is more richly supplied with blood, and the walls of the vessels have less support than in the white matter; or we may have a very considerable quantity of blood poured out, causing great destruction of nervous tissue. Judging from certain distinctly marked cases, clinically, which recovered, it is probable that small extravasations may be quickly absorbed and may do no great damage.

Cases have been encountered at all ages, though perhaps the accident may be said to occur most frequently in males between twenty and forty years of age.

The symptomatology will necessarily vary with the amount and situation of the hemorrhage. A

[1] Read before the Clinical Society of Maryland, January 15.

large amount of blood, or even a small quantity, in the upper cervical region, may prove very rapidly fatal. The most important symptom is the suddenness of onset. If there are distinct prodromata of some days we must call the case one of myelitis, and not hemorrhage—at all events a *myelitis hemorrhagica*, and not idiopathic hemorrhage. Pain is not as common nor as severe as in meningeal hemorrhage, but it is usually felt at some point along the spine, with perhaps some girdle-sensation.

The patient in a few moments loses strength; if the hemorrhage be in the cervical region, a more or less general paralysis occurs; if in the dorsal or lumbar region, paraplegia. There may be some hyperesthesia, but this rapidly passes into anesthesia, which corresponds to the segment of the cord involved. There is an absence, or at least there is very little of the spasmodic movements and muscular rigidity, so characteristic of meningeal involvement. Of course, the meninges may be to some extent involved in an intra-spinal lesion, and hence we may have symptoms of both conditions. Bladder and rectum may be involved, especially when the lumbar cord is the part affected. There may be slight loss of consciousness, but rarely is this symptom marked. Respiratory and circulatory disturbances, as well as pupillary disturbances, are the rule when the hemorrhage is in the upper cervical region. It is important to observe that there is never any rise of temperature. The reflexes are likely to be slightly exaggerated unless large areas of gray matter, as the lumbar enlargement, be involved, in which event, of course, they are abolished.

No very thorough electrical tests seem to have been made, but in all probability electrical reaction is not much altered, unless the gray matter be largely destroyed. In this case we have either entire loss of electrical reaction or the reaction of degeneration. Muscular atrophy follows destruction of the gray matter; otherwise contractions may be noticed.

The foregoing, in brief, are the more salient points in the symptomatology of this rare affection. The following case, which came under my care recently, presents, I think, enough of these symptoms to warrant a diagnosis of hemorrhage into the cervical portion of the cord.

J. C., thirty-three years of age, a blacksmith, with a family and personal history remarkably good, says that he has never been sick a day in his life. He is a large, healthy-looking man. Three weeks before admission into the hospital he arose in the morning feeling perfectly well, ate a good breakfast, and started to his work. After walking a short distance he felt a sudden dizziness, with sharp pain in the cervical region, and he fell to the ground. He was not unconscious. He suffered more or less pain during that day, and on the next day the pain in the region of the seventh cervical vertebra was very sharp. When he was picked up, after he had fallen, he was entirely helpless—not able to move hand or foot of either side; he was not able to move his hand freely, though he had no aphasia or facial paralysis. There was tenderness on pressure over the cervical region. He says there was marked loss of sensation, especially in the arms.

He has now regained slight use of arms and legs; he can feed himself and walk with assistance, but he has little or no use of his fingers for nice movements. There is no atrophy of muscles, or at all events atrophy is not marked. The patellar reflex is about normal. There is loss of sensation over the outer side of both arms; sensation in the legs is normal. There is slight stiffness of the neck. There is decided tenderness to deep pressure over the seventh cervical vertebra. The general condition of the patient is good. Neither bladder nor rectum is affected. The muscles of the arms showed increased reaction to the galvanic current — what might be called a slight reaction of degeneration.

The patient only stayed a week in the hospital, and has never returned, so that the outcome of the case cannot be given.

The sudden onset of the attack, while the patient was in perfect health, the absolute paralysis, the loss of sensation, the electrical reaction, the local pain—all point to hemorrhage into the cord.

Curiously enough, there was in the surgical ward of the hospital at the same time a case of fracture of the spine at about the seventh cervical vertebra, afterward confirmed by autopsy, and the areas of anesthesia of the two cases corresponded almost exactly. In all probability, as the case went on, muscular atrophy of the arms developed, an event that was foreshadowed by the electrical reaction.

CLINICAL MEMORANDA.

A CASE OF SO-CALLED LARYNGEAL VERTIGO OR LARYNCEAL EPILEPSY.[1]

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OF the various neuroses of the larynx none is so rare or so unique in characteristics as that described as "laryngeal vertigo," "laryngeal epilepsy," and "complete glottic spasm in adults." So few cases of the affection have been reported that it would seem to be the duty of observers to report such cases as may come under their care, and for this reason I take occasion to add another history to the list.

Lennox Browne is the first to mention the disease in any work on *Diseases of the Throat*, but it was first

[1] Read before the New York Academy of Medicine, February 18, 1892.

described in 1876 by Charcot.[1] Since that time cases have been reported by Gasquet,[2] Krishaber,[3] Grey,[4] Lefferts,[5] McBride,[6] Russell,[7] Massei,[8] Thermes,[9] Knight,[10] Gleitsmann,[11] Dauvan,[12] Lenox Browne,[13] Armstrong,[14] and recently a case has been reported by Adler.[15] About twenty-five cases in all have been reported.

The history of my case is as follows: W. J. R., aged fifty years, an Englishman, manufacturer of confectioners' supplies; has resided in America ten years. His family history is good; his father and mother are still living and free from neuroses, and five brothers are all in good health. His complexion is florid and his appearance robust. He has never had venereal disease, and careful examination reveals no symptoms of syphilis, either inherited or acquired. He is of nervous temperament but has never developed any neurotic characteristics, but says his friends call him excitable. For ten years he has been under severe mental strain, from business worriment. One year ago he had articular rheumatism for four days, this being his only attack. He has never had muscular rheumatism or gout. He never has used tobacco or snuff in any form, but takes ale or beer in moderation with his meals.

In July, 1891, on entering a shop, he stepped into an open trap-doorway and struck on his hip. He was badly stunned, but did not lose consciousness. He was in bed only eight days, but refers all his suffering to the hip, and says that though he was very nervous he had no disturbance referable to the head and spine during that time. Aside from this, he has never had any fright or sudden shock of any kind; neither has he had convulsions or fits. He has never had vertigo in any form, but has had what he calls bronchial catarrh for several winters. His eyesight and hearing are normal, and he has never had aural vertigo. He has had headaches quite frequently during his life, but less so now than formally, and has never been annoyed by hebetude or mental confusion. His attacks of coughing have always been accompanied by a profuse discharge of frothy mucus, which was on one occasion tinged with blood. Physical examination reveals very little, except coarse râles, but his heart is slightly hypertrophied and its action weak.

He first came under my notice December 20, 1891. Three weeks previously he had taken a cold that had followed about the course of those of previous years, until one week ago, when the cough became more violent and paroxysmal. He remarked to me that it was "like whooping-cough, because it was so strangling." Two days before I saw him, during a paroxysm of coughing, without premonition of any kind, he fell suddenly to the floor upon his back, entirely losing consciousness. The attack lasted but a few seconds; he arose from the floor feeling perfectly well, with no pain or unpleasant feeling of any kind, and with no vertigo either before or following the attack. The sensation was exceedingly pleasurable, and upon being asked how he felt after an attack, exclaimed "I felt as though I had been in heaven."

Following the first attack he had one nearly every day for four days; they sometimes occurred while he was in bed. As a rule, he stood up when coughing and leaned forward with his hands upon a chair or some other object for support, but he invariably fell upon his back during the attack. On one occasion he fell upon the street, but was up again before anyone reached him. In every instance the loss of consciousness came on during a paroxysm of coughing, but he had many paroxysms of cough which were not followed by loss of consciousness. He had had four when I first saw him, and loss of consciousness was complete in all, and the sensation that gave rise to the cough was the same as he had experienced in former years. He did not bite his tongue, foam at the mouth, or groan or shriek; but on several occasions his mouth twitched convulsively during the attack, and his eyes remained open. He had, in all, twenty fits, and on one day he had five fits between 3 and 9 P.M. In every instance there was complete loss of consciousness. I instructed his wife to watch him carefully during the attacks; she reported that his face became very blue, and that unconsciousness would terminate in from five to fifteen seconds, when he would arise and walk as steadily as before. On two occasions he complained of a sensation of pressure in the arms and in the region of the deltoid muscle, and, again, of what he termed "smarting of the brain." The patellar reflexes were normal.

Examination of the upper air-passages revealed a general hyperemic condition with no specially sensitive areas. There is polypoid degeneration of the middle turbinated bones, an exostosis on the septum, on the right side, with a posterior hypertrophy on the right inferior turbinated bone. There is no varix at the base of the tongue and only slight hypertrophies. His uvula was amputated thirteen years ago on account of its relaxed condition, which caused cough. The larynx, aside from a subacute inflammation, is normal in appearance. The vocal cords are congested at the edges, but approximate perfectly. There are no signs of paralysis.

After about ten days' treatment these attacks disappeared entirely, and have not recurred up to this time (February 18th). His diet was carefully regulated, his bowels opened with a brisk cathartic, and he was given fifteen grains of bromide of sodium, three times a day, in conjunction with five-minim capsules of eucalyptol, four times a day. The eucalyptol relieved both the cough and the profuse discharge in a very few days, and he has made a good recovery. He had no other medicine except a general tonic.

Lefferts's paper, published in 1883, closes with this suggestive statement: "Have I not said enough concerning this rare and curious affection to show, first, what a field for speculation, thought, and investigation lies

[1] Comptes-rendus de la Société de Biologie, p. 336. Paris, 1876. Le Progrès Méd., 1879, xvii, p. 317.
[2] Practitioner, August, 1878.
[3] Ann. des Mal. de l'Oreille et du Larynx, 1882, p. 182.
[4] Amer. Journ. Neurol. and Psych., November, 1882.
[5] Archives of Laryngology, vol. iii, p. 165. New York, 1883.
[6] Edinburgh Med. Journ., March, 1884.
[7] Birmingham Med. Review, August, 1884.
[8] Giorn. Internat. delle Sci. Med., Anno vi.
[9] Journ. de Méd. de Paris, 1887, p. 936.
[10] Transactions Amer. Laryng. Assoc., 1886, p. 34.
[11] Med. Monatschr., i, p. 510.
[12] Journ. de Méd. de Paris, August 17, 1887.
[13] Diseases of the Nose and Throat, 3d ed., p. 526.
[14] THE MEDICAL NEWS, June 8, 1889.
[15] New York Med. Journ., January 30, 1892, p. 128.

practically before us; and, second, should not this thought stimulate us to the task?" Nearly a decade has passed, during which careful observers have published cases that have come under their care, and all have noted the same general run of symptoms, viz: Paroxysms of cough, cut short by sudden loss of consciousness of short duration, occurring always in adults, and without premonition, leaving the patient as well as before the attack. In most cases there was a neurotic predisposition.

These symptoms could hardly be associated with any disease—so that the diagnosis is easy. But observers vary greatly as to the name that this disease should receive. So far, the consensus of opinion favors epilepsy.

Grey says: "The term vertigo seems to me to be a misnomer for these cases, in all of which consciousness was entirely lost, and in many of which there were convulsive movements. They are notably unlike the vertigo of Menière." This is exactly opposite to the views held by Charcot. Others, including McBride, Russell, Knight, and Gleitsmann believe it to be due to disturbance of the circulation of the brain. Lennox Browne inclines to Grey's opinion that the attacks "are more in common with the milder forms of epilepsy than with simple vertigo." McBride gave it the name "complete spasm of the glottis in adults." Thus, different observers have seen fit to give this condition different names, but no name has yet been suggested that conforms to the opinions of all observers. It would seem to me that the absence of vertigo in so many of the cases would preclude the use of the word as a name for this condition—while epilepsy would more nearly fill the requirements. Laryngeal syncope might be suggested, inasmuch as the condition is a "sudden loss of motion and sensation," with a certain amount of disturbance of the circulation and cessation of respiration. On the other hand, the pleasurable sensations experienced by so many of the patients might be accounted for by asphyxia on the same principle as that produced by laughing gas—a thought suggested to me by a prominent neurologist.

A word as to treatment. I have regretted that I did not confine my treatment to eucalyptol, so that I might have demonstrated its effects in a case of this kind. Its well-known influence upon cases of chronic bronchitis, both for the reduction of cough and diminution of expectoration, would seem to give us a remedy that will strike at the root of the disease. I cannot say too much for this remedy, given internally, for all cases of nasal, laryngeal, and bronchial affections when accompanied by free discharge. Its superiority over the eucalyptus oil can easily be demonstrated.

THE REMOVAL OF THE FAUCIAL TONSILS BY THE GALVANO-CAUTERY SNARE.[1]

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It is not contended that the removal of the hypertrophied faucial tonsils by the galvano-cautery snare is a new discovery. It simply suggests that the writer feels morally sure that the members of our profession have been slow in appropriating a most valuable expedient and one that, as it were, glared them in the face. However, the basis of what may well be termed the ideal method of tonsillotomy dates back many years and its elaboration has been the result of gradual growth.

Perhaps the excision of the tonsil by the cold snare, so often given to the young and eager students in nose and throat diseases as their first lesson in tonsillotomy, constitutes the *pater bonus* of the galvano-cautery snare operation, just as in the removal of nasal polypi it was the origin of the more scientific method that supplanted it. Very naturally, the tediousness of the operation and the prolonged continuance of the pain militated against its universal adoption; besides, the use of the tonsillotome was so easy and satisfactory that no one cared to exert the patience that was entailed by this method—a refinement of art with few advantages and with many unsatisfactory features. But the application of galvano-cautery to the wire changes the argument of the case, relieves the snare of the onus of tediousness, and adds to its advantages so many improvements that, after once being used, it will be advocated in every favorable case. And the fact that it is not generally adopted can only be explained on two grounds: either the profession at large is not conversant with the operation—for, indeed, little has been written upon the subject—or, true to the immemorial traditions of medicine, the profession is loth to give up an operation that answers the needs so well, even if it is not ultra-scientific.

Comment is almost unnecessary upon the shortcomings and advantages of the tonsillotome; it is a serviceable instrument, and beyond the little annoyances of a possible uncleanliness of the instrument, the dangers of hemorrhage, and of snipping off a piece of the palate, and the necessity of frequently operating, as it were, with the eyes closed, the instrument is more or less perfect.

The good effect of such an operation, too, is dependent upon the operator, and we thus have every possible gradation between those who operate in the hit-or-miss style and those whose surgical technique is so finished that they can remove just as little or just as much as they desire with the utmost ease. It will be admitted, however, that in a great number of cases one is not able to remove precisely as much of the tonsil as he desires; so that there is at least room for some improvement in this particular. Again, the very common practice of pressing the tissues below the ramus of the jaw inward, augments whatever dangers otherwise existed. Any abnormality in the arrangement or course of the bloodvessels in this region may, under such a practice, change a benign operation into a dangerous one.

In the galvano-cautery snare, we have an instrument which overcomes even these little deficiencies. The danger of infection is reduced to a minimum, since it is a self-sterilizer; the red-hot wire consumes whatever germs are in contact with it, and by searing the exposed tissues prevents, in part at least, the possibility of septic infection. No hemorrhage results even in adults, and thereby an important danger is avoided. In this connection it may be remarked that although the statement is going the rounds that there has been no authentic case of fatal hemorrhage from the use of the tonsillo-

[1] Read before the St. Louis Medical Society, Dec. 12, 1891.

tome, it is, however, certain that distressing and even alarming bleeding does occur which would be impossible in a cautery operation.

The operation advocated does not necessitate the exercise of what Mackenzie describes as the only brute force required in any operation upon the throat. Again, there is no possibility of cutting off or injuring a portion of the palate. Finally, the operation is a scientific one which insures precision and security. Each operator may decide for himself how much of the tonsil he desires to remove, and what is still better, he can remove exactly that amount. In my own practice I have been so struck with the satisfactory results of this method that, where it is possible to do so, I now use it to the exclusion of all others; in fact, the considerable experience of ten months with the method amply confirms my original impressions and my present position.

The instrument used is the ordinary galvano-cautery snare for the removal of nasal polypi, consisting of a platinum or an irido-platinum wire about the size of a No. 5 piano wire, which is passed through two hollow tubes and is attached to a slide for tightening the loop. While there might appear to be some difficulty in engaging the tonsil, this will be obviated by adopting the expedient of pulling out the tonsil from its palatal bed with a pair of single-pointed forceps. Once engaged, the process is simple: drawing the wire tight by pulling the slide and sending the current through it, the operation, with but slight pain to the patient, is accomplished in a moment. It is well to make an application of a 5 or 10 per cent. solution of cocaine to the tonsil and the subjacent mucous membrane, so that the patient will not be conscious of the presence of the wire as it is being placed around the tonsil. Intra-tonsillar injections may be made, but thus far I have not found it necessary to do this. A two-celled storage battery of almost any manufacturer is sufficiently powerful for the performance of this operation. I have used the Meyerowitz storage battery with perfect satisfaction. Of course, many will be inclined to harp upon the unreliability of batteries and upon the careful attention they are supposed constantly to require; but, nowadays, when storage batteries are so elegantly made, no such condition of affairs need obtain.

The removal of the hypertrophied tonsils by galvano-cautery snare is indicated above all others whenever there is any tendency to hemorrhage; in fact, whenever there is any possibility of serious hemorrhage occurring; hence it is especially advisable in adults.

When removal of adenoid growths in the vault of the pharynx is to be done simultaneously with excision of the tonsils, nothing can take the place of the operation that I advocate. And for this reason: when the tonsillotome operation is performed first, the bleeding may prevent the removal of the adenoids, and if the latter is performed first too much hemorrhage almost invariably supervenes to permit the former. By using the galvano-cautery snare, both operations may be completed without the occurrence of tonsillar hemorrhage and the subsequent anesthesia, and operative interference will not be necessitated.

Even in tonsils that are more or less impacted, or over which the anterior pillar projects to any extent, can this method of procedure be utilized. For it is easy enough to grasp a small portion of the tonsil with forceps, to engage the snare, and then to remove the tissue. On a number of occasions I have had the satisfaction of observing the atrophy of the tonsil succeed this operation, with disappearance of the previous symptoms. It is certainly better to remove in this way a small portion of the tonsil than simply to cauterize it, for in the former case we have all the advantages of cauterization with the added feature of removal of a portion of redundant tissue. This is better in many instances, to my mind, than dissection of the impacted tonsil, whether by galvano-cautery or otherwise. At any rate, it is advisable to attempt the removal of a part in this way, previously to undertaking the more complicated and serious operation of dissection.

Dr. Jonathan Wright has devised an instrument for the removal of tonsils by galvano-cautery, which may be described as the application of the galvano-cautery principle to Mackenzie's guillotine tonsillotome. While the instrument is doubtless of considerable service, it presents no advantages over the simple snare, and it is far more complicated.

Up to the present time I have not met with any complications resulting from this operation. On a number of occasions I have observed some little ear-pain immediately following the operation and sometimes persisting for a short time thereafter. This I have thought was due to the too great traction made upon the palate.

Anesthesia is not more frequently required for the performance of this operation than for the older method. In fact, it has seemed to me that it was easier to get the child's consent than when I removed the tonsil in another manner. In a number of cases, children have not only submitted to the operation but have also allowed it to be done before a large class of students.

PROFESSOR WINCKEL'S ANTERIOR COLPORRHAPHY.

BY THEOPHILUS PARVIN, M.D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

THIS operation is described in a paper by Dr. Winckel in the *Münchener med. Wochenschrift*, No. 31, 1891. Two illustrations are given with the description.

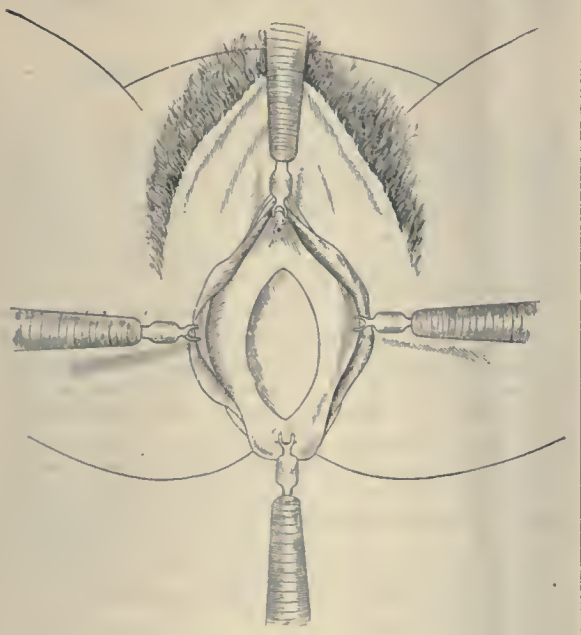
The operation commends itself by its simplicity, by its being comparatively bloodless, by there being no sacrifice of tissue, and by its satisfactory results in its author's hands. The operation has been done by me only once, and this too recently to know the ultimate result, but Dr. Winckel's experience justifies presentation of the method to the American profession.

The second and third illustrations are in part copied from those of the author, but, as I believe, somewhat improved, while the first is original. For the three as they now appear I am indebted to Dr. Bert L. Swayze.

The first illustration shows the field of operation properly exposed, and the surface made level by pulling moderately upon the four tenacula. It will be observed that these tenacula are near the extremities of the two diameters of an ellipse. The figure also shows an ellipse

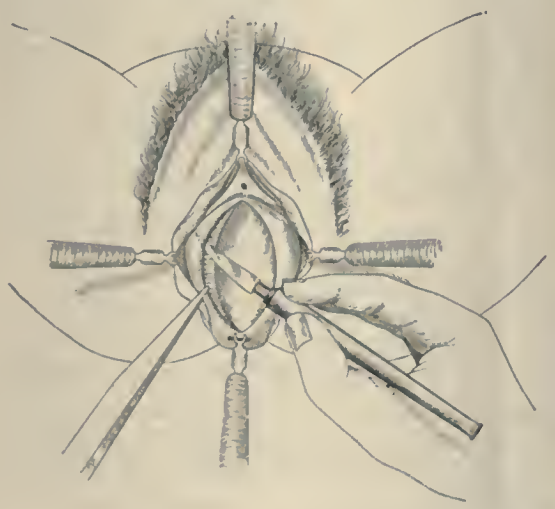
circumscribed by a vertical incision through the mucous membrane.

Fig. 1.



In the next illustration there is seen the dissection of a flap circumscribing the incised line.

Fig. 2.

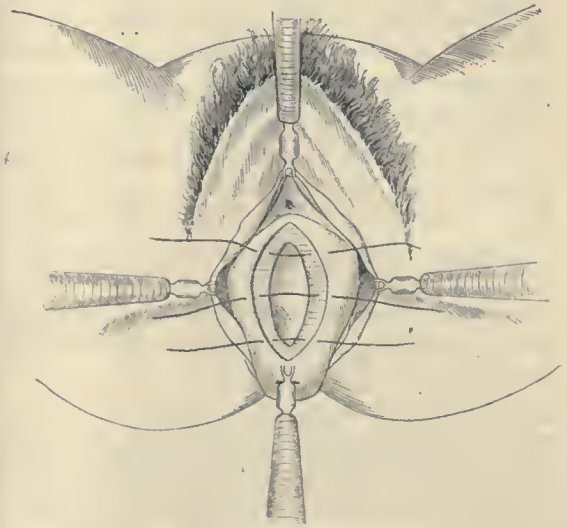


Next, the inner surface of this circumscribing flap is brought together by three silkworm-gut sutures. Fig. 3 shows these sutures introduced, but not tied.

After these sutures are tied, a continuous catgut suture is introduced, and the operation is ended.

When one bears in mind that in most, if not all, the cases in which anterior colporrhaphy is required, the vesico-vaginal wall has been greatly thinned, there is reason to believe that that mode of operating will be best in which no tissue is sacrificed, but rather retained, so as to assist in restoring the normal thickness of that wall, and especially at that part which has become thinnest, viz., that which is furthest from the point of attachment. It is readily seen that, from the extent of

Fig. 3.



surface brought together in the median line, this part of the wall is made especially strong and resistant.

MEDICAL PROGRESS.

Acute Angio-neurotic or Circumscribed Cutaneous Edema.—Bauke (*Berliner klin. Wochenschr.*, 1892, No. 6, p. 114) reports two cases of angio-neurotic edema—one in a female, the other in a male. From these and from a summary of the literature, he finds many reasons for a belief in the purely nervous nature of the affection. In most of the cases the patients have been neurotic, some presenting hereditary tendencies. In many the condition was associated with other neuroses, such as urticaria, neuralgia, abnormal sensations, digestive derangement The swelling of the skin commonly set in abruptly after mental or emotional perturbation, and disappeared as suddenly; sometimes it appeared to depend upon alcoholism. It is usually unilateral in distribution, and in females its occurrence is favored by the menstrual or the climacteric period. Its cessation is dependent upon the improvement and removal of the nervous condition with which it is associated.

Double Hemorrhagic Subdural Cyst.—At a recent meeting of the Pathological Society of London, Pitt (*Lancet*, No. 3558, p. 1042) presented a double hemorrhagic subdural cyst, obtained from a man, aged forty-six years, who for eighteen months had suffered with frontal headache, with occasional right-sided twitching at night. The twitchings became more frequent two weeks before death, when the man became dull, apathetic, and increasingly comatose. At the autopsy, two delicate cysts were found in the subdural space in the frontal region. The walls of the cysts were composed of embryonal connective tissue. The cyst on the right contained six ounces, that on the left three ounces of serous fluid and recent blood-clots. The dura mater was not inflamed.

The cysts were loosely attached to the dura mater, but not to the arachnoid.

Unusual Causes of Jaundice.—WHITE (*British Medical Journal*, No. 1622, p. 219) has reported the fatal case of a man eighteen years old, who, following an attack of right-sided pneumonia, successively developed hectic temperature, jaundice, and the symptoms of empyema. At the autopsy a ruptured aneurism of the right branch of the hepatic artery, as large as a Tangerine orange, and compressing the hepatic duct and portal vein, was found. A smaller aneurism occupied the left hepatic artery.

In the case of another man, thirty-four years old, jaundice appeared, and the urine contained biliary pigment in conjunction with the existence of a movable right kidney; a corrective operation upon which was followed by disappearance of the symptoms.

A Mechanical Aid in Cases of Paralysis of the Radial Nerve.—To make good in some measure the loss of power in the extensors of the hand and fingers, with the consequent loss of function in the unantagonized flexors, HEUSNER (*Deutsche medicin. Wochenschr.*, 1892, No. 6, p. 115) has constructed a device by which the hand is maintained in a position of normal extension. The carpus, the wrist, and the lower half or two-thirds of the forearm are encased in a leather frame, reinforced on its flexor aspect by a steel plate. The thumb is left free. Upon the extensor aspect of the casing, toward its radial margin, provision is made for the attachment of four wide rubber bands that run through stalls on the dorsum of the carpus and are attached to other rubber bands encircling each finger at its origin.

The Prophylaxis of Ophthalmo-blennorrhea Neonatorum.—BRISKEN (*Münchener medicin. Wochenschr.*, 1892, No. 5, p. 67) defends the utility of the method of Kaltenbach in the prophylaxis of ophthalmo-blennorrhea neonatorum, consisting in vaginal antiseptic douches at the beginning of labor, together with washing of the eyelids of the infant with distilled water immediately after birth. Among 728 cases thus treated, during a period of nearly three years, at the Frauen-klinic at Halle, there was not a single instance of ophthalmo-blennorrhea at birth.

The Etiology of Paretic Dementia.—In observations made at the Vienna Insane Asylum, OBERSTEINER (*Internat. klin. Rundschau*, 1892, No. 4, p. 137) found that about a third of those presenting various forms of paralysis were syphilitic, while of these seven-eighths were paretic dements. Of other forms of psychosis but 3 per cent. presented a syphilitic history. That the relation between syphilis and paretic dementia is a direct one seems demonstrated by the identity of the lesions in the nervous system and those in other organs.

Uterine Complications of Influenza.—In addition to cases of hemorrhagic endometritis, in conjunction with influenza, already reported, GOTTSCHALK (*Centralbl. f. Gynäkol.*, 1892, No. 3, p. 49) reports two cases in which the onset of the disease was marked by profuse uterine hemorrhage, while in its further course parametritis, with exudation, appeared. In a third case, at the beginning of an attack of influenza, an acute parametritis was developed in connection with preëxisting parametrial adhesions.

THERAPEUTIC NOTES.

Exalgin in Chorea.—LOWENTHAL (*Berl. klin. Wochenschr.*, 1892, No. 5, p. 95), reports the results of the employment of exalgin in the treatment of thirty-five cases of chorea. Three grains were given three times daily; in a few cases the dose was given five times daily; in one case a grain and a half were given daily. The patients ranged from three to eighteen years of age. The cases presented all degrees of severity. The results were, on the whole, satisfactory; recovery was speedy in mild cases, retarded in severe cases. The duration of treatment was from a week to eight months. The results were the better the earlier in the disease the cases were seen. Unpleasant symptoms, such as tinnitus aurium, a sense of intoxication, disturbances of vision, vertigo, nausea, vomiting, jaundice, increased pain, headache, and cyanosis, were observed in some cases in which the largest doses were employed; but these manifestations ceased upon the withdrawal of the remedy. It seemed as though a certain degree of tolerance of the remedy developed.

For Odontalgia due to Acute Pulpitis.—When toothache is dependent upon acute inflammation of the dental pulp, the distressing symptoms to which the condition gives rise may be relieved by introducing a bit of cotton impregnated with one of the following solutions into the cavity of the carious tooth or teeth, after thorough cleansing:

℞.—Menthol . . . . . gr. xxxvj.
Chloroform . . . . . f℥j.—M.

℞.—Cocaine hydrochlorate } āā gr. iv.
Morphine hydrochlorate }
Creasote, sufficient to make a paste of creamy consistence.

℞.—Morphine sulphate . . . gr. iij.
Atropine sulphate . . . gr. jss.
Distilled water . . . f℥j.—M.

L'Abeille Méd. [*La Sem. Méd.*]

For Hoarseness.—In addition to the measures employed in the treatment of the causative condition, the following formula will prove useful in the amelioration ot hoarseness:

℞.—Acid. tannic. . . . ℥j.
Pulv. sodii biborat. . . ℥j.
Tinct. capsici . . . f℥ss.
Aquæ rosæ . . . . f℥x.—M.

S.—To be used frequently as a gargle. WHITLA.

For Metrorrhagia.—Hydrastinin hydrochlorate in doses of a third of a grain, every six or eight hours, is recommended as a useful remedy in the treatment of metrorrhagia dependent upon congestion or catarrhal inflammation of the uterus. The good results should be perceptible in the course of two or three days.—*Berlin. klin. Wochenschr.*, No. 7.

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SATURDAY, MARCH 19, 1892.

THE THERAPEUTIC EMPLOYMENT OF ANTITOXINES.

IN the *Münchener medicinische Wochenschrift* of February 2, 1892, pages 76 to 78, BUCHNER gives a review of the efforts that have been made to apply therapeutically in the management of disease in human beings the results of recent studies upon the *modus operandi* of immunity.

The work of FODAR, NUTTALL, NISSEN, LUBARSCH, BUCHNER, and others, has demonstrated that the blood-serum of certain animals possesses an antagonism to the life of particular pathogenic micro-organisms and that the property is due to the presence, in the serum, of a body belonging to the group of albumins. With this observation as a basis, experiments were made upon the serum of animals under varying conditions, to determine if there existed naturally or could be produced artificially differences in the degree of this anti-bacterial property that the serum was found to possess.

The results of these studies indicate that decided differences in germicidal powers exist between serum from different animals, in its activity against different organisms, and that this property is not confined to an influence upon the living organisms themselves, but in particular cases there is present in the blood of animals a body that is *antidotal to the poisons produced by the bacteria*, without being in any way detrimental to the life of the organisms that produced the poisons.

Most prominent among the results of these studies were the results obtained by BEHRING and KITASATO in their work upon tetanus, which went to show that in certain animals that were susceptible to this disease it was possible to produce a condition of immunity against the inroads of the organism that causes it, and that when immunity was once established the blood-serum of the immunified animal possessed the property not only of affording immunity to other susceptible animals, but had more or less of curative effect when the disease was already in progress. The same authors demonstrated that the blood and serum not only of animals that had been rendered immune to tetanus, but likewise to diphtheria, possessed the power of rendering inert the living organisms that play the etiologic rôle in the production of these maladies. The practical application of this observation to the therapeutics of tetanus was first made by TIZZONI and CENTANNI, who isolated from the serum of immunified animals the anti-tetanus principle, and TIZZONI claims to have employed it with successful results in the treatment of tetanus in the human being. SCHWARZ, assistant in the surgical clinic at Padua, also recently reports (*Centralblatt f. Bakt. u. Parasitenkunde*, Bd. x, No. 24) the cure of a case of traumatic tetanus in the human being by the use of the tetanus antitoxine of TIZZONI and CENTANNI. The case reported by SCHWARZ was one of tetanus resulting from a wound that had become infected through the soil. The tetanic spasms were not affected by chloral, hot baths, or injections of carbolic acid. After three subcutaneous injections of the antitoxine, each injection consisting of from 0.15 to 0.20 grams of the dried substance dissolved in water, the general condition rapidly improved. With continuation of these injections, in slightly increasing doses, the improvement was more marked. After each injection there was a marked fall in temperature, followed by profuse sweating. Toward the end of the injections the primary wound was excised, but this could in no marked way have affected the treatment of the case by the antitoxine, for, as the symptoms showed, there had already been a sufficient absorption into the system of the poisonous products of the organism growing at the point of infection to give rise to the characteristic spasms of tetanus. The case was dismissed from the hospital cured in six weeks.

Another case of cure by this method of treatment is also reported by SCHWARZ as having occurred in Toscana under the management of DR. PACINI.

Still another cure is reported by FINOTTI from the surgical clinic of PROFESSOR NICOLADONI in Innsbruck. This cure occurred in a boy whose hand had been crushed in a machine to such an extent that amputation became necessary. On the eighth day after amputation tetanic spasms began to appear. On the eleventh day the injections were begun, and after twenty-eight injections the case was completely cured.

In a similar line the experiments of KLEMPERER and KLEMPERER in connection with acute fibrinous pneumonia must be looked upon as a bacteriologic triumph, even though they are as yet by no means completed. These observers succeeded not only in rendering susceptible animals immune to the form of septicemia produced by the organism that is believed to be the cause of acute fibrinous pneumonia, but, moreover, demonstrated that the serum of these animals had the power of affording both immunity to the disease, when injected into other animals, and also of bringing about a cure when injected into animals in which the disease is already in progress.

After obtaining these results in the lower animals they directed their attention to the cure of the disease by this means in human beings, and found that by the subcutaneous injection of the serum of immunified animals to patients suffering from acute fibrinous pneumonia the results were in the main promising. They demonstrated that while healthy individuals and those suffering from other forms of disease presented no systemic reaction after the injection of the serum, in six cases of acute pneumonia in which the serum was employed there was a marked fall of temperature and slowing of the pulse within the first twelve hours after it was injected. In four of these cases the temperature fell to normal, but rose again after six hours; in the remaining two it fell to normal and remained there.

At about the same time EMMERICH and FARWITZKY and FOÀ and CARBONE published results of similar nature, in so far as the lower animals were concerned, but obtained by somewhat different means.

Space will not permit of a complete detailed review of all the observations upon this interesting subject, but those that have been cited will suffice to indicate the turn this work is taking and the direction in which it will ultimately find its greatest and most valuable application. The results of purely scientific medical research accumulate more or less slowly, and frequently are of such a nature that they cannot be appropriated by the "busy practitioner," or, indeed, appreciated by him, but when such ends are gained as those just referred to it is difficult to understand the lack of interest and sympathy that so frequently is seen between the practising physician and the laboratory student of medical research.

IRREGULAR MANIFESTATIONS OF MALARIA.

FROM early times, clinical observers have been familiar with the fact that the malarial intoxication is manifested not only in the form of paroxysms of chills and fever, but also under that of various disturbances of the circulation, respiration, and digestion, possibly of nervous origin, and in motor and sensory disturbances of undoubtedly nervous character. An accurate knowledge of the subject, however, has by no means been widely diffused among the ranks of the profession, and prior to the discovery by LAVERAN and other observers of the characteristic hematozoa of malaria, the diagnosis of these cases has invariably been involved in more or less doubt and no little dispute. That "malaria is a cloak for ignorance" has long been a reproach made by the laity against physicians, and the statement undoubtedly contains an element of truth.

From many standpoints the lecture delivered by PROFESSOR DA COSTA at the Pennsylvania Hospital, and reported in the *International Clinics* for October, 1891, is an important contribution to the subject of malarial paralysis. The diagnosis of the case there recorded was rendered absolutely indisputable, not only by reason of careful observation of the symptoms, and by the therapeutic test, but also by the discovery of characteristic parasites in the blood. PROFESSOR DA COSTA lays great stress upon two facts of importance in diagnosis, namely, that there may be an intermittent paralysis which is not malarial, and secondly, that the manifestations of malarial paralysis are in the majority of cases far from being periodic. He distinguishes three forms: First, general paralysis or paraplegia, with irregular symptoms; secondly, the form in which periodicity is striking, which is more commonly hemiplegia; thirdly, the rarest form, that in which organic disease is produced by the malarial intoxication, and in which periodicity and variability are not prominent, the case running much the course of ordinary paralysis when produced by its usual causes. The

last-mentioned form, commonly due to a lesion such as meningitis or hemorrhage, shows itself most often in the shape of a hemiplegia. It is not, strictly speaking, a malarial palsy, although malarial fever has brought it about. It is rather palsy in malarial disease.

In the treatment of malarial palsies quinine must be given in large doses, for "the malady will go on unchecked by small doses—nay, it may develop while these, or even while what are generally considered as sufficient doses, are being employed."

In addition to the palsy of the extremities in the case reported by Da Costa, interesting ocular lesions were found, the details of which have been published in full, with charts, by Dr. Harlan, in the *Transactions of the American Ophthalmological Society*, vol. v, 1890. Headaches, impairment of memory, outbreaks of hallucinations and of maniacal delirium, characterized the progress of the disease. Notwithstanding all this, however, recovery was complete. "Eye symptoms, brain symptoms, all disorder seemed to melt away under the potency" of quinine, coincidently with the disappearance of the microörganisms from the blood.

Less striking but more common than cases of the nature of that described by Professor Da Costa, are malarial neuralgias, especially supra-orbital and infra-orbital. In these cases the manifestations are sometimes, but not invariably, periodic; and the pain, obstinately resistant to ordinary anodyne and nervine medication, rapidly disappears under the influence of quinine; but, as in the cases of palsy, the drug must be given in large doses: ten grains on going to bed, and from ten to fifteen grains upon rising in the morning, repeated for two or three days, have absolutely and permanently cured cases that have resisted not only ordinary treatment, but even long courses of what the elder Gross used to call "piddling doses" of quinine.

THE IMMORALITY OF THE READING-NOTICE.

1. If true to his calling the physician is so far as possible a scientific man—that is, his statements as to disease and the cure of disease are true, and represent the facts.

2. When a physician makes a scientific statement over his own written signature, asserting a fact to be true, it follows that he must have proved the truth of his statement by his own scientific tests, knowledge, and experience, or that he at least has confidence in some person of scientific authority and of undoubted trustworthiness, who has testified to the truth of the statement.

3. The editor of a medical journal is a physician.

4. A statement about medical science in his editorial columns is a personal assurance over his signature on the part of the editor that he knows and guarantees the assertion true.

5. When an editor lends his editorial columns at high prices, and inserts advertisements under the guise of editorial authority, he thereby personally guarantees the truth of the advertiser's statements, or, for a definite bribe in hard cash, he enters into fraudulent collusion with his advertiser to pretend to do so.

6. The reading and editorial columns of a medical journal are, ostensibly at least, for the benefit of subscribers—medical men—and of medicine. The advertising columns plainly stand for what they are—space frankly sold advertisers with no editorial guarantee as to the truth of statements made. The act of smuggling an advertisement into the reading or editorial columns is deception and fraud. Every subscriber should at once resent the insult to his intelligence and morality by stopping his subscription to a journal that thus deceives him, and wrongs medicine.

A large number of medical journals are guilty of this immorality. Just at present there is synchronously appearing an advertisement in the editorial columns of many American medical journals. It is several pages long, alike word for word in each journal, and so cunningly written as to appear the spontaneous and independent assurance of the editor. To the discerning eye, however, it is a shallow advertisement of a secret proprietary preparation, one whose chemical constitution is not known, and therefore one that is squarely against the code of ethics, medical or human, to prescribe or to recommend. These editors aver that "after careful investigation we submit the following as a compendium of an examination of the pathological and physiological action" of the drug advertised. All through the article the editorial "we" is used to praise the drug in the most unqualified manner for a large number of diseases in which "we" have proved it to act "admirably," etc. The editors testify that the drug is "of the amido-benzole series, in combination, and is much to be preferred to any other of this class of derivatives, etc."

Medical writers have long been abusing the lay

and religious press for selling their space to patent medicine men, and lo! our own house stinks!

COPIES OF ADVERTISEMENTS DESIRED.

IN extenuation of the medical sin of sneak-advertising in lay newspapers on the part of physicians, it is often said that it is all the fault of their assistants, of impolitic friends, clinical subordinates, and especially of the pokey-nosed reporters. But it is a noteworthy fact that the gentlemen thus unwisely befriended and deceitfully interviewed pop up in the daily papers with suspicious regularity and persistency, and that other surgeons and experts are never traduced or reported either with or without authorization. This leads to the suggestion that a collection of reading-notices, etc., of these enterprising physicians from the secular and religious papers, extending over a sufficient space of time, would be of interest to the student of psychology and medical ethics. We therefore beg the readers of THE NEWS to send such to this office. What we particularly desire is the reports of "wonderful" and "delicate" and "unique" surgical operations; professional opinions concerning the prevailing epidemic, or fashionable disease; the *obiter dicta* of Professor Supercil or the learned Doctor Greatlite concerning the state of health or dangerous disease of some billionaire, singer, actor, criminal, or statesman, who for the hour may be posing before the public eye. We will classify and index the excerpts in a systematic way, and may give a statistical review of them at some future time, thus adding one more "insertion," as it were, and of course wholly *gratis*. Possibly, in view of this disinterested offer of ours, those most interested might be prevailed upon to spare our correspondents the trouble, by themselves forwarding their own reports and interviews. Their typewriters could supply duplicates, or the reporters by special request would doubtless furnish advance galley-slips. But on second thought we shall be forced to depend upon our subscribers, because, of course, the doctor who secretly advertises does not read THE NEWS.

SELECTIONS.

IMPORTANCE AND NECESSITY OF NATIONAL HEALTH-SERVICE.

IT has long been my conviction that there should be in this, as in every other nation, a systematically conducted central Public Health system, whether called a department, bureau, board, or otherwise; that it should have a responsible head; that it should have the co-operation, and assistance when required, of all State and municipal boards and authorities; that it should be a distinct and separate branch of the public service, having powers, duties, and privileges entirely its own; that it should be unhampered and undisturbed by political circumstances or changes, with ample funds and facilities for the elucidation and treatment of all the great and perplexing problems pertaining to the prevention of disease.

Whatever may be thought or said regarding the centralization of authority in a political sense, here, it seems to me, its advantages to the people of a nation are too apparent to admit the possibility of question.

National control of public sanitation is "protection" in its highest and most beneficent signification.

My own conception of our present pressing need is as follows:

I would have the National Board of Health, as at present provided, rehabilitated and charged with the duty of supervising, particularly all matters of public health in the *interior*, calling it, perhaps, the "Health Department of the Interior;" I would have the Marine-Hospital Service, as at present constituted, especially clothed with powers relating to *external* quarantine; I would have both these departments retained, acting separately under ordinary circumstances, and jointly in certain contingencies when they arise; I would have in connection with this Health Department of the Interior numerous experiment-stations established, which should be entirely under Government patronage and control, and fully equipped with laboratories—chemical, physical, and bacteriological—each with an efficient corps of well-trained scientists, upon the same general plan by which the agricultural experiment-stations are operated; I would have these scientific observers made Government officers, with salaries sufficient to insure against their personal wants, and pensions when retired, in order that their undivided attention might be given to the work for which they are employed; I would have them constantly commissioned to make original and experimental investigations into the ultimate causes of disease, wherever found, and required to report the results for publication and distribution.

As an auxiliary to this Board, I would have a National Congress of Health, to take the place of the present "Conference of State Boards," which should meet at regular intervals—a representative body composed of delegates from each of the State and Territorial boards.

And when, as in logical sequence these proposed premises suggest, an *International Board of Health* shall be established, the most efficient state of development will be attained, and sanitary science will be a mighty messenger to indicate the approach of a perfected civilization, when the protection of the health and life of every human being will be regarded as the highest and most paternal function of the State.

Let us confidently cherish the hope that we soon shall see the day when the public indifference to this all-important subject will be overcome, and when our public servants will be induced to worship the powerful Mammon less and seek the beneficent shrine of the goddess Hygeia more.

My friends, preventive medicine is the most momentous question of our time.

The late lamented Samuel David Gross, the illustrious sage, the prince of American surgeons, at the dedication of the monument erected to the memory of the pioneer of abdominal surgery, Ephraim McDowell, gave utterance to the following significant words:

"Young men of America! Listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is not this operation or that, not ovariotomy or lithotomy or hip-joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets—in a word, our surroundings, whatever and wherever they may be, whether in the city, town, hamlet, or country; and the establishment of efficient town and State boards of health, through whose agency we shall be more able to prevent the origin and fatal effects of what are known as the zymotic, or preventable diseases, which carry so much woe and sorrow into our families, and often sweep like hurricanes over the earth, destroying millions of human lives in an incredibly short time.

"The day has arrived when the people must be aroused to a deeper and more earnest sense of the people's welfare, and suitable measures adopted for the protection, as well as for the better development of their physical, moral, and intellectual powers.

"This is the great problem of the day—the question which you, as representatives of the rising generation of physicians, should urge, in season and out of season, upon the attention of your fellow-citizens—the question which, above and beyond all others, should engage your most serious thoughts and elicit your most earnest co-operation.

"When this great object shall be attained, when man shall be able to prevent disease, and to reach, with little or no suffering, his threescore years and ten, so graphically described by the Psalmist, then and not till then will the world be a paradise."—A. Walter Suiter, M.D., *in The Sanitarian, March*, 1892.

CORRECTION OF DISPENSARY ABUSES.

If a free dispensary is so managed as to treat the very poor only, it will do the profession no injury; on the contrary, it will be a positive benefit by relieving the profession of the care of the class that taxes the time and strength of the practitioner without yielding him any return.

Evidently the sticking-point is, who are and who are not proper objects for free treatment? It should be as much the business of a well-conducted dispensary to diagnosticate poverty as to diagnosticate disease, and always the first before the second. How is this to be done?

The ordinary way is by careful questioning, at the same time using the judgment that comes with a large acquaintance with the class in question, to determine how far their statements are to be believed. I usually ask: Are you able to pay a physician? What wages do you or does the head of the house receive? Are you out of work? How many children are in the family? An ideal way is to employ in every case the efforts of a specially organized body whose business it is to find out just what we want to know, and abide by its decision, rendering aid without it only in urgent cases and until it can be heard from. I refer to the Charity Organization Society, which sends a speedy and wonderfully accurate estimate of the ability of the family to pay, and whether or not it should be treated free of charge.

A good way would be to have a central bureau of medical relief, to which the applicant should first go, and which should treat urgent cases without delay, referring them to the general dispensary nearest their homes for further treatment. All others should be carefully examined as to their ability to pay physicians in their own neighborhood. With the recommendation of this central office the patient might be treated at any dispensary for thirty days, when another permit could be issued, and so on.

To go to the central office twelve times a year for a recommendation is surely an easy way to receive medical treatment, if such treatment is necessary. If, however, the patient is able to pay even a small fee to a physician, the dispensary and public opinion, instead of preventing him by any device, should compel him to make such payment as the most honorable of obligations. To give a man what he can by honest labor pay for, is to take the first and a long step toward making that man a blatant communist or beggar, who wants every man with more than himself to divide with "his laziness and improvidence."

While most of the ills that dispensary patients complain of are due to minor ailments preventable or curable by a little care, fresh air, and properly prepared and eaten food, there still remains a goodly number of organic diseases, readily overlooked in the hasty way dispensary patients are often examined. Many are the cases of cardiac valvular disease treated for malaria, while there are doubtless scores of patients upon every dispensary record with undoubted renal disease who are treated for the accompanying dyspepsia, bronchitis, or diarrhea, but where no microscopic examination of the urine has been made.

Unless the dispensary physician is ever on his guard, he tends to become brusque and arbitrary in his dealings with his patients, and hasty and superficial in his methods. I am inclined to believe that no one should hold a position of this kind too long.

An attempt to obtain medical advice by false pretences of poverty should be treated as any other attempt to obtain value without rendering an equivalent. My own practice at present is, as nearly as possible, the following:

Inhabitants of certain squalid alleys well known to me are treated without question, their names, ages, and residences being recorded in a register. The destitute and forlorn, whose aspect is unmistakable to anyone having dealings with the poor, come in first of all for treatment. Mechanics, artisans, or laborers, out of work and out of money, the poor families of drunken and worthless men, are in my opinion entitled to free treatment.

Adults who have to pay for their board and lodging out of their wages when the latter are less than $5 per week, I usually treat free at the Garrett Dispensary.

House servants, earning $10 to $12 per month, can and do pay physicians for advice. I dwell on the pecuniary aspect of the case, since this is where the greatest care should be taken to prevent the pauperization of the patient, and to protect the practising physician.

When in doubt whether the patient, after all, is a fit subject for a dispensary, I have in very numerous instances referred the case to the Charity Organization Society, with most gratifying results. The writer would suggest that a conference of representatives of various dispensaries of Baltimore be held, to which a number of general practitioners living in their immediate neighborhood be invited, at which the entire matter might be thoroughly discussed, and a basis arranged upon which patients will be treated or refused treatment. Such an agreement should be signed by the dispensary physicians and be binding equally upon all. It then should be posted in a conspicuous place in each dispensary. Certainly it is time that something was done in our different cities to check what is already an injury to the public at large, and to the profession in general.—WALTER B. PLATT, M.D., *in Maryland Medical Journal, February* 20, 1892.

DEFECTS IN THE STRUCTURE OR FUNCTIONS OF THE EYES AS A SOURCE OF MORBID PHENOMENA.

A SHORT time ago the editor of THE MEDICAL NEWS directed attention to the fact that a great discovery respecting the relief of human suffering had been ignored by the profession. He showed that as a fact defects in the structure or functions of the eyes actually do cause many morbid states, as headache, vertigo, dyspepsia, constipation, neurasthenia, insomnia, and other ills of kindred nature. He gave some reasons why this discovery had been so commonly ignored by the profession. His neighbor, the editor of the *Medical Record*, an accomplished general surgeon, takes up the matter, and suggests that there is such uncertainty as to what the "great discovery" is that the profession is excusable for ignoring it. He also says that many cases of headache, vertigo, constipation, insomnia, etc., get well without glasses, by the operation of natural causes, by suggestion, or by medicines. We think that these remarks by the *Record* abundantly demonstrate the force of the claim by THE NEWS. From the latter it is very evident that the editor of the *Record* does not himself comprehend the discovery. He also shows that he has not studied with discrimination the writings of ophthalmologists relating to this subject.

In general, it may be said that ophthalmologists do not claim to be able to cure every case of headache, insomnia, neurasthenia, etc., by the use of glasses, prisms, or operations upon the ocular muscles. As a rule these gentlemen are good practitioners of general medicine. Hence, they know that the great proportion of patients suffering from these disabilities are under the influence of other and adequate disturbing causes. They know that the removal of these causes will induce the desired relief. Some may not get enough sleep, some may drink too much coffee, some may suffer from overeating, or eating indigestible food, some may be poisoned by bad air, some from too much worry, etc. But the cases to which THE NEWS refers, and which ophthalmologists have in mind, are the complement of this large class. They are those upon whom hygiene and doctors, homeopathic, eclectic, regular, and defective have exhausted all their resources, and still the disability remains. It may be that the rhinologist has burned out the nose, the laryngologist has scraped and sprayed the larynx, the gynecologist has rendered perfect the organs of reproduction—in short every means and measure has been utilized by the most skilled, and still the patient suffers from headache, has insomnia, is neurasthenic, is constipated, is dyspeptic, etc. In such a class of cases the ophthalmologist has found by experience that his art is able to restore many, if not all, to a normal healthful condition of living. It is this fact that the general profession does not practically know, or, if it does know, it ignores it. The real difficulty in the matter is the intricacy of the problems involved, and the fact that the majority of the profession are not trained so as to be able to comprehend these problems. Hence they permit patients whom they have been unable to relieve to continue to suffer, in the calm belief that medical science can give no relief. We submit that a fair intelligent mastery of the current ophthalmological literature will convince any person that no intricate case of derangement of the nervous or nutritive system is hopeless while the eyes have not been submitted to a thorough examination by one properly trained to do this work. The charge made by THE NEWS was that such cases were daily cast off as hopeless by the general profession without having recourse to a searching examination of the eyes.

Concerning this sort of examination, any physician can become skilled in making it. But its draft upon a peculiar kind of knowledge and skill is so large that we suspect that most will not care to qualify themselves. Hence it will be imperative that they refer the class of patients under consideration to other physicians whom they know to be competent for this work. The main point is the assurance that suffering human beings secure all the relief that modern medical science, including ophthalmology, can give. Certainly it is no light matter to ignore the claim of ophthalmology to be able to relieve vast numbers of the suffering that no other means has been able to relieve.—*Editorial in the American Lancet, March*, 1892.

CORRESPONDENCE.

URIC ACID AND RHEUMATISM.

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS of February 13, 1892, Dr. W. E. Shotwell propounds the question, "Is uric acid a prime or sole factor in the causation of rheumatism?"

One of the most important factors to be studied in relation to this subject is diet. On this subject the author of the article referred to seems to be greatly at variance not only with competent authorities, but also with well-established chemico-physiologic laws. Uric acid is not "produced in the system by a stimulating nitrogenous diet and the use of alcoholic beverages." A nitrogenous diet is not stimulating, and the proof of

this statement is most readily determined by the nature of its chemical formation and by the results, necessary time, and mode of conversion into the final products of oxidation.

As to the use of alcoholic beverages, it might be said that alcohol in quantities that exceed the accommodative capacity of the system are damaging to the organism to the extent of their use of oxygen. The physiologic extent of accommodation differs greatly in individuals. There is practically no difference in the nature of the members of the carbohydrates and alcohols. All of them—starch and sugar—have to be converted into a glucose or alcohol-like compound, or an isomer of one or the other, before they can enter the system. The members of this group never enter the system, therefore, under their own form, and if alcohol is to be abolished from the rheumatic dietary, so should the sugars or those compounds that are converted into glucose or its isomer. Properly speaking, uric acid is not produced by anything, but it is the result of a suboxidation of the proteid food-stuffs. This incomplete transformation of the proteids follows the ingestion of a larger amount of the CHO compounds than the organism can appropriate and utilize as heat, energy, lubrication, and rotundity of form. It is a well-known fact that a CHO molecule is more easily oxidized than one of proteid nature, and being more easily changed into its final products—carbon dioxide and water—uses all the oxygen it desires, leaving but an insufficient amount for the proteids. We must remember that the oxygenating capacity of the system is a limited one. The consequence of this is that we have circulating throughout the body such products of incomplete tissue-metamorphosis as uric acid, kreatinin, kreatininic leucomaïnes,[1] glucose, lactic acid, oxalic acid, hippuric acid, etc., as we know them, or antecedents to these compounds.[2]

We consider, therefore, that uric acid in the urine is but the expression of deranged metabolism or incomplete oxidation of the proteid elements.

The reasoning according to which "uric acid, by its irritating influence upon the low-grade tissues of the body, gives rise to rheumatic attacks," we are obliged to consider as without any clinical, chemical, physiologic, or pathologic proof, and in direct variance with well-established and chemico-physiologic facts. Clinical observations must not be regarded as infallible. They are of value only when the laws governing the animal organism are given due consideration, and the interpretation of cardinal signs is in accordance with the results of post-mortem experience. It is admitted by all, and most scientifically explained,[3] that the presence of uric acid in the various structures of the body gives rise to certain manifestations that we term gout. There seems to be no doubt but that rheumatism is caused by a special poison of a non-bacterial, *i. e.*, chemical, nature. Porter and other authorities advance the hypothesis that it is directly dependent on the formation and retention within the connective-tissue structures and intermuscular planes of lactic acid, or its antecedent compounds. Abundance of clinical evidence, the study of body-oxidation, and the products of its incomplete performance, seem clearly to demonstrate the possibility, and greatly strengthen the probability of the hypothesis. It is found that lactic acid is a direct product of suboxidation of a proteid molecule. For if we attack the proteid with 139 parts of oxygen we get the normal waste-products, urea, uric acid, kreatinin, carbon dioxide, water, and a molecule of sulphuric acid, as follows:

$$C_{72}H_{112}N_{18}O_{22}S + 139\,(O) = 4\,(CH_4N_2O) + C_5H_4N_4O_3 + 2\,(C_4H_7N_3O) + 55\,(CO_2) + 38\,(H_2O) + H_2SO_4.$$

If, however, the suboxidation is to the extent of where only 94 parts of oxygen are used, we have added lactic acid ($C_3H_5O_3$) as follows:

$$C_{72}H_{112}N_{18}O_{22}S + 94\,(O) = 2\,(CH_4N_2O) + 2\,(C_5H_4N_4O_3) + 2\,(C_4H_4N_3O) + 7\,(C_3H_6O_3) + 31\,(CO_2) + 19\,(H_2O) + H_2SO_4.$$

Another fact that should be considered is that when a muscle contracts vigorously it becomes acid. This acid in a certain per cent. is a natural product of energy, which is the result of oxidation, or in other words, a certain per cent. of this acid present in the tissue is directly due to normal oxidation.

Numerous researches by competent observers (Berzelius, DuBois-Reymond, Kuhne, Heinheim), have shown that this acid is lactic acid. When the metabolic processes are at fault from dietetic or other causes, this result of katabolism is not disposed of in the usual way, but is left to act as a local irritant.

Although the positive proof of the nature of the poison beyond that given is lacking, we at the same time possess the negative information that it is not uric acid, and "so rheumatism and rheumatoid arthritis are easily distinguishable from gout, where undoubtedly sodium urate is the poison." (Garrod.)

There is a difference between the two conditions—rheumatism and gout—etiologically, symptomatologically, and pathologically. The two are distinct. When we place both these conditions under the influence of a proper diet they disappear. The non-appearance and decrease of these products in the urine under treatment that insures thorough oxidation of the proteid compounds is of the greatest weight in favor of the foregoing statement. It is common clinical experience to see gout and rheumatism both present in the same individual at the same time. How can the presence of two such dissimilar diseases be explained by the novel method of reasoning that they are both caused by the same poison?

If humanity should receive the education desired by the author of the article under consideration, apoplexy, Bright's disease, tuberculosis, diabetes, and all the diseases of which the great etiologic factor is decreased nutrition and vitality would be greatly increased, and man be in a most miserable condition.

Very respectfully, JAMES WOOD, M.D.

BROOKLYN, N. Y.

[1] "The Feeding of Youth," Merck's Bulletin, February, 1892.

[2] The Post-Graduate, January, 1892. Table IV, p. 61.

[3] Porter, In Merck's Bulletin, January, 1892, p. 8.

"INFECTION AND CONTAGION."

To the Editor of THE MEDICAL NEWS,

SIR: I have read with much interest your editorial in THE MEDICAL NEWS of February 20th relative to the words *Infection* and *Contagion*. In any discussion, an

exact agreement as to the meaning of the te rms used is of the highest importance. There is no doubt that a great deal of inexact thinking, false reasoning, and many erroneous conclusions, in medicine as in other sciences, result from a lack of clear definitions.

The dictionaries often help on the confusion. No one can tell from Webster or Dunglison, the exact difference between contagion and infection, any more than he can between the words hallucination, delusion, and illusion. How, then, shall it be settled? By mutual agreement? There are too many to agree. A proper definition of a term is not one which someone thinks that it ought to have, but that which it actually does have. How shall that be determined? In two ways—first by its etymology, and second by its use.

If we thus examine the two words in question, and find the fundamental conceptions which underlie them, we shall find that a correct conclusion may be reached. It appears to me that, from its etymology, the meaning of each of those words is reasonably clear and definite, and that when one carefully observes the sense in which they are used by the majority of educated medical men, it will be seen that they are more often used in their proper and etymologic sense than otherwise.

What is wanted is clear definitions, clearly stated, and the reasons for them. A lexicographer or a grammarian arrives at a standard definition, or a standard form, by a study of its derivation and its actual use. This, when formulated, furnishes a rule for the guidance of the uninformed, and in doubtful cases. Let us examine these words and find, if we can, their underlying, basic meaning.

Infection is from *inficio*, from *in* and *facere*, to do to—to do [something] to [somebody or something]. Infection is something done *to* some one or something, *specified: by* someone or something, *not specified*. Thus Webster's primary definitions of infect are, to stain, to taint, to affect with anything. The underlying idea is an impression upon something, by something else, foreign to itself—that is all. This is precisely the sense in which it is used in medicine. Although it is often used carelessly and loosely, and without a distinct and definite idea of its meaning, yet more often it is used with the meaning stated.

An infectious disease is a diseased condition or action of an organism, produced by some morbific entity foreign to itself. The morbific entity, from wherever coming, is an infection. It matters not whence it comes, whether from earth or air, or from some other similarly diseased organism. This definition excludes heat and cold, and generally all diseases that are autogenetic. Malarial fever, cholera, typhoid fever, and smallpox are infectious. The morbific agent comes from without; from the "not me."

Contagion, from *con* and *tangere*, conveys the idea of touching, of contact. Something [definite] is touched, or affected, by something else [also definite]. It is not necessary that the contact be immediate. It may be mediate contact. A may strike B with his fist; that is immediate contact. He may throw a stone and hit him; that is mediate contact.

Contact, or contagion, supposes two definite things; one transmitting something to the other, or affecting the other. That is just the sense in which it is used in medicine.

A contagious disease is one produced by some entity foreign to itself [*i. e.*, infection] *and* which infection emanates from some other organism affected with the same diseases, by the contact, mediate or immediate, whether there be actual contact, as in scabies, whether contact through the air, as in smallpox, or by fomites. These are the etymologic meanings, and the meanings most often used, though perhaps not clearly formulated by all who so use the words. Infection is a more comprehensive term than contagion. It includes it and much more. All contagious diseases are infectious, but not all infectious diseases are contagious. Some A is all B.

What of those infectious diseases [produced by a foreign morbific material] and which are not contagious [the morbific material not coming from another case]? They are miasmatic diseases, of which malarial fever is a type. Paludal miasm is an infection, but not a contagion.

It is quite true that the greater number of infectious diseases are also contagious, yet the distinction is broad and clear, and should be kept so in our minds and in our speech. Our facts may be errors, our theories may be false, yet that is no reason why they should not be clearly stated. If those who know the right will persistently follow it, the unthinking, the undecided, and the mistaken will of necessity, sooner or later, fall in with them. It is an interesting fact, that in those infectious diseases which are contagious the morbific material undergoes unlimited development and multiplication [zymosis] in the person of the individual affected, and the dosage is a matter of comparative indifference.

A microscopic particle of smallpox virus will produce, in the subject infected with it, enough to infect all mankind. This is not true of those infectious diseases which are not contagious, but are miasmatic. The morbific material is not thus multiplied in the subject infected, and the effect produced by the infection is in direct proportion to its quantity.

Let us, then, construct a formula as follows:

INFECTIOUS DISEASES.	*Contagious Diseases.*	The morbific material comes from another individual with the same disease.	The morbific material is indefinitely multiplied in the infected individual. Dosage immaterial.
Those produced by a morbific material from without.	*Miasmatic Diseases.*	The morbific material does not come from another case of the same disease, but from any source.	The morbific material is produced independently of any living being, well or ill. The effect produced is in direct proportion to the dose.

Very respectfully,

J. E. TEFFT.

SPRINGFIELD, MISSOURI.

VOMITING AFTER OPERATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: In the March number of the *American Journal of the Medical Sciences*, my friend, Dr. John B. Roberts, writes as follows:

"For the nausea and vomiting which occur after inhalation of ether, I usually do nothing except to have the patient's head so placed that any ejected material may easily escape from the mouth. Little actual vom-

iting occurs if the patient has been given the preliminary hypodermatic injection, and especially so if he has taken no food for several hours before the operation. The practice of giving drugs to combat vomiting is, I believe, unnecessary and unreasonable, unless the vomiting shall be prolonged and evidently depressing to the patient. Draughts of hot water for the relief of ether-vomiting are given by some physicians, and in some cases may be desirable, as retching, when the stomach is empty, is often more disagreeable than vomiting water which has been put into the stomach."

My own experience, which is confined to a limited class of cases, and does not include general surgery, has impressed me with the fact that vomiting after operations is often quite frequent, always annoying, and, at times, of such severity as to be alarming, and even threaten a serious disturbance of the dressing, if not detachment of the sutures, with its evil consequences. I have often seen severe vomiting or retching follow the use of ether-chloroform, with and without the previous hypodermatic of morphine, alone or combined with atropine, and in cases in which no food had been administered for hours previously to the operation. This happened to me recently in a patient who had been most carefully "prepared," and also had taken ether for an operation on the perineum. At the present writing a patient is only just sleeping quietly after thirty-six hours of retching and vomiting following chloroform-narcosis for the removal of a large fibroid attached to the fundus uteri. In neither of these cases was there the slightest sign of sepsis.

Both of these cases were at once relieved by hourly doses of one drop of tinctura iodi and one grain of carbolic acid in a half-ounce of cinnamon or aniseed water.

The last-mentioned case at first vomited bile, and then the retching was most distressing. She drank water as hot as she could tolerate it—at her own request—which at first gave relief, but was then vomited *en masse*. Ice could not be borne; fomentations had no effect; cocaine was tried with temporary relief; small doses of morphine and atropine increased the trouble, and finally the mixture indicated had a quieting effect.

I have used cerium oxalate, strong coffee, drop doses of wine of ipecac (repeated every ten or fifteen minutes), iced champagne, brandy and crushed ice, mustard or cantharides to the epigastrium, sips of hot water, aromatic spirits of ammonia, peptonized milk, malted milk, frozen beef-tea, chloroform water, with at times good results, but I must say the iodine and carbolic acid (not original with me) have served me best of all. Respectfully yours, J. M. KEATING.

COLORADO SPRINGS.

THE IRREPRESSIBLE QUACK.

To the Editor of THE MEDICAL NEWS,

SIR: In THE NEWS of February 13th there is an article on the "Salutary Effect of State Medical Examining Boards," stating that the Examining Board of Washington had rejected one-half of the applicants. This is true, and our Board is doing good work, and we have a good law if it were enforced—but there's the rub. It will soon be two years since our law went into force, and there have been no convictions for illegal practice. The member of the State Examining Board here is a homeopath, and we thought from the manner in which he started in to prosecute illegal practitioners in Spokane that we would have the law enforced. He began with Dr. Carey, the head of the "Biochemics." Carey was convicted in the two lower courts, and has carried his case to the Supreme Court. The expenses of prosecution have been paid by the regular Medical Society of Spokane. There has as yet been no final decision in the Carey case.

The next case was that of one Reddy, a man that had a 10-cent barber shop in Seattle three years ago. He advertises and does not pretend to have attended any medical school. In the first trial the jury disagreed, and another day is set for a new trial. Reddy then had Dr. Penfield's father arrested. Penfield is a member of the Board of Examiners, and was carrying on the prosecution here. The law provides that all physicians coming into the State after the law took effect should pass an examination. At the trial it was proved that Dr. Penfield, Sr., had sent his diploma to his son here to have it registered under the old law months before moving to Spokane. Again, the jury disagreed. At the next trial of Reddy there were no witnesses present, and the case was dismissed. Since then there have been no arrests. There are at least fifteen persons practising illegally in Spokane. They make no pretence of complying with the law. I will send you a copy of the *Northwestern Journal of Biochemistry*, one of the greatest medical monstrosities of the day. These men composing the faculty were not physicians, but they procured a charter, which was granted on the 19th of June, 1889. On the 29th of June, 1889, they issued a number of diplomas. They registered their diplomas under the old law, and on that registration they claim a right to practise.

The article in THE NEWS of February 13th would lead people to believe that Washington was no place for quacks, but they live and thrive here.

Respectfully yours, W. R. FREEMAN, M.D.

SPOKANE, WASHINGTON.

CHICAGO.

Decline in Death-rate from Typhoid — Women Physicians and Trained Nurses at the World's Fair — Charges against City Health Commissioner — Reporting and Placarding Cases of Typhoid.

TWENTY-EIGHT deaths from typhoid fever were reported in this city the last week in February, a decrease of nearly one hundred per cent. from the preceding week, when the record of fifty-two deaths was itself a marked decrease from the week preceding. Health Commissioner Ware is confident that the month of March will show a continued diminution in the number of deaths.

March 7th, the women physicians and trained nurses assembled in response to a call to hear reports and adopt plans in the interest of the profession for a display at the World's Fair. The call was signed by Dr. Frances Dickinson as Chairman, and by Drs. Isabella Hotchkiss, Marie Reasner, Katherine Miller, and Isadore L. Green. The meeting is the fourth that has been held. At the first one, on October 23, 1891, an address was delivered by

Dr. Frances Phillips, President of the Illinois Woman's Exposition Board, who invited the profession, and particularly the trained nurses, to make a special display at the Columbian Exposition, which should include an emergency ward. The suggestion was eagerly accepted, and a committee was appointed with instructions to invite the coöperation of the trained nurses of Illinois, in order that the emergency ward should represent the women physicians, surgeons, and trained nurses of the entire State. On February 25th, the Illinois Woman's Exposition Board put its seal on the project by appropriating $6000 of its $80,000 State fund for the proposed display. It was largely for the consideration of the best disposition of this money, and to discuss the means of securing the best results with it, that the meeting was held.

The interest in the project was abundantly shown at the meetings. The proposed exhibit was discussed by several speakers, among whom was Dr. Dickinson, who said that the display of the medical women and trained nurses of Illinois should, and probably would, form one of the most striking features of the women's exhibit at the World's Fair. The spirit of emulation was aroused by the statement that a leading feature of the exhibit to be made by the women of Great Britain would be a complete exposition of the methods of nursing employed in England, and which have attracted attention the world over. The friendly rivalry thus created between the methods employed across the water and those in vogue here would, it was suggested, lead to excellent results in the way of improving the service. A number of prominent women physicians and trained nurses from England would, it was said, visit the Fair, and the Illinois woman's display would naturally come in for a great deal of attention. For this reason, it was declared, the display should be in every way complete and a credit to the profession.

During the examination of applicants for position in the Army Medical Corps, held here in February, it is said that out of twenty-four who took the examination, but two passed.

Charges of professional discourtesy, arbitrary conduct, and officiousness, were preferred against our City Health Commissioner at a recent meeting of the Chicago Medical Society. The charges were embodied in a petition that had been actively circulated among the members of the local medical profession asking for an investigation into the methods employed by the Health Department relative to reporting contagious and infectious diseases.

In the early part of February last, Commissioner Ware sent to all physicians postal cards requesting them to report to the Health-offices all cases of typhoid fever coming under their care, as the report was of vital importance as a matter of record. The card also stated that premises would not be placarded for typhoid fever. A week after he received a letter from a prominent physician to the effect that he would make no such report, unless he received positive assurance of being paid for such services rendered to the Health-office. He was opposed to the ordinances that compel a physician to report contagious cases to the Health-office. He considers the law unfair in this regard. What right has the city to ask a physician to do its work for nothing? In England they do things better. They give a physician a fee for reporting cases of contagious disease. The fact is, said this prominent physician, the methods employed by our health and sanitary departments are wrong. The law that places a placard quarantining a house in which is a contagious case is a relic of barbarism, a practice of medieval times, and it does a great wrong many times. Take the case where the placard is nailed on the door of a man who has a small shop under his living rooms. That man's business is ruined for two months at least. Now, is it fair or right that he should suffer simply because there is some danger that the contagion will spread beyond his house? Nothing can be done toward properly quarantining people until a contagious hospital is built.

REVIEWS.

Diseases of the Skin. A Manual for Practitioners and Students. By W. Allan Jamieson, M.D., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary. Third edition, revised and enlarged, with woodcut and nine colored illustrations. Philadelphia: Lea Brothers & Co., 1892.

It has been but a short time since the first edition of this excellent book made its appearance, and the profession and the author alike are to be congratulated upon the present edition, which brings the subject-matter, and especially the new remedies, well up to date. Among diseases that have been elaborated or newly introduced, we may mention dermatitis herpetiformis, pityriasis maculata, lymphangioma circumscriptum, pityriasis rubra pilaris, xanthoma diabeticorum, and leprosy. The classification presented is that of Bulkley, which is a complete and elaborate scheme. The subject-matter throughout the work is handled in an intelligent, plain, practical manner that betokens familiarity with the diseases considered. The symptoms and treatment receive especial attention—pathology being, we think, somewhat slighted. Everywhere we note a sense of discriminating power and an endeavor to separate the grain from the chaff. Originality, personal experience, and reports of cases are noticeable features that give interest to the book. These points serve to distinguish it from some of the older classic works on dermatology that deal with the subject in a more systematic way. The book can hardly be called a complete system of skin-diseases, no effort apparently being made to include the whole field. Considerable space is devoted to certain of the rarer diseases, some of which might with propriety have been given to several of the commoner affections. We must regard the work, therefore, as better adapted to the needs of the practitioner than to those of the student.

A test of the worth of a treatise on diseases of the skin is the manner in which eczema is considered. This chapter in the book before us, while it cannot be regarded as exhaustive, contains much of value and merit. We desire to call attention especially to the chapter on eczema as influenced by age, including infantile eczema; and also to the remarks on eczema of the climacteric period, both of which are suggestive.

The treatment of the disease receives due space, the various new modes of local applications that have latterly been introduced, including gelatin and similar dressings, pastes, and spread plasters and muslins, being referred to. Much practical information will be found in the chapter on this subject, together with instructions as to the proper employment of such recent remedies as chrysarobin, resorcin, ichthyol, and the numerous medicated soaps.

As already intimated, an honest, wholesome spirit pervades the volume, which makes itself felt nowhere more forcibly than in the parts devoted to therapeutics. With some diseases more space might well have been given to therapeutics; thus, that distressing and often rebellious affection pruritus genitalium is dismissed with apparent haste, making us wish that the author had told more that he surely knew.

The scope of the work is more cosmopolitan than is usual with English writers, mention being made here and there of the discoveries and labors of dermatologists of various countries. We note that authors are not infrequently quoted without references—an omission that is to be regretted, for the student is thus deprived of the opportunity of consulting the originals. The chromo-lithographic plates, nearly life-size, which are scattered throughout the pages are variable as to merit, but are better than are usually found interleaved in text-books. They represent some of the rarer affections, such as dermatitis herpetiformis, morphœa, acute lichen planus, lichen verrucosus, and tuberculosis of the skin. The general appearance of the book is highly creditable to the publishers. We wish the work the cordial reception it deserves.

The Treatment of Typhoid Fever, and Reports of Fifty-five Consecutive Cases, with only One Death. By James Barr, M.D., Physician to the Northern Hospital, Liverpool; Medical Officer of Her Majesty's Prison, Kirkdale, etc. Introduction by W. T. Gairdner, M.D., LL.D., Professor of Medicine in the University of Glasgow, etc. 8vo, pp. 212. London: H. K. Lewis, 1892.

There is no specific treatment for enteric fever. It is probable that there never will be, notwithstanding the specificity of the disease. Nor is it reasonable to hope that the disease will ever be entirely stamped out. By careful observance of prophylactic measures the risk of infection can be reduced to a minimum and extension can be limited. The invasion of the disease once established, the futility of any efforts to destroy the infective agent must be realized. It remains to treat symptoms as they arise, and by anticipating possible complications to prevent their occurrence. Any therapeusis that will minimize the risks and dangers of the natural course of the disease will commend itself. That hydriatic measures, rationally applied, will meet the indications has been amply demonstrated, and among these the cold bath has proved itself one of the most useful. The employment of the cold bath in febrile conditions, and especially in enteric fever, is attended with certain minor difficulties. Dr. Barr has sought to overcome these by keeping the patient continuously in the bath. For this purpose he employs a tank, six feet long, nearly three feet wide, and sixteen inches deep, lined with lead and having a capacity of seventy gallons. The patient, wrapped in a blanket, rests upon bed-ticking, the head, of course, not being immersed. Special provision is made for carrying off the dejections and for renewing the water, as well as changing its temperature, as occasion demands. A thermometer is constantly kept in the tank. As long as the temperature of the patient is over 100°, that of the tank need not be more than 93°, but as the body temperature approaches the normal, so should the tank temperature. Dr. Barr reports fifty-five successive cases of enteric fever, with one death. Twenty-two cases were treated in the tank; eleven received some special form of treatment, such as the wet-pack, etc.; twenty-two received symptomatic treatment. Eighteen of the patients were less than fifteen years old; twenty-nine were between fifteen and thirty; five were more than thirty. Albumin was present in the urine at one period or other in twenty-seven cases. Rose-spots were found in thirty-five. Spleen was enlarged in forty. Ankle-clonus was elicited in twenty-six. Intestinal hemorrhage occurred in four. Meningitis developed in two. Respiratory complications appeared in thirty. There were relapses in four.

The Anatomical and Histological Dissection of the Human Ear, in the Normal and Diseased Conditions. By Adam Politzer, M.D., Professor of Otology in the Imperial-Royal University of Vienna. Translated from the German by George Stone, of Liverpool. With 164 illustrations and 1 plate. London: Baillière, Tindall & Cox, 1892.

In this valuable work, so ably translated into English, the reader is first informed as to the necessary instruments, then he is inducted into the method of removal of the organ of hearing from the dead body, for anatomical purposes, without visible injury to the skull; and, thirdly, examinations of the cranial cavity and brain in middle-ear suppuration, and in cases of cerebral disturbances of hearing terminating fatally, are fully considered. Then follow chapters on "Dissection of the Macerated Temporal Bone;" "Anatomical and Pathologico-anatomical Preparation of the Organ of Hearing" (an exhaustive chapter of over one hundred pages); "Making Preparations of the Organ of Hearing by the Process of Corrosion," and "Mounting and Preserving Anatomical and Pathological Preparations of the Ear." Then follows a "Special Part," divided into the following chapters: "Histological Examination of the Auricle and of the Cartilaginous Meatus;" "Histological Examination of the Lining of the Osseous Meatus;" "Histological Examination of the Membrana Tympani;" "Histological Examination of the Mucous Lining of the Tympanic Cavity;" "Histological Examination of the Ossicula;" "Histological Examination of the Intertympanic Muscles;" "Histological Examination of the Eustachian Tube;" "Histological Examination of the Labyrinth;" and "Histological Examination of the Central Course of the Nervus Acusticus." This work is indispensable to the anatomist and scientific aurist.

The first number of *The Practitioner's Monthly*, edited by C. L. Dodge and J. Chambers, with associate editors, and published at Kingston, N. Y., claims that it will be cheap, bright, honest, independent, and devoted to the interests of the country practitioner.

MEDICAL DIAGNOSIS, WITH SPECIAL REFERENCE TO PRACTICAL MEDICINE.[1] By J. M. DA COSTA, M.D., LL.D. Seventh edition. Illustrated. Philadelphia: The J. B. Lippincott Co., 1890.

IT is practically impossible to review the seventh edition of Da Costa's *Diagnosis*, without repeating, to a very great extent, the laudatory opinions that have already been expressed in THE MEDICAL NEWS, as well as in other American medical periodicals.

Of this edition it may well be said that the author has succeeded in placing it abreast of the times. This is an accomplishment in which books that have reached a seventh edition often fail, for, like ships that have been rebuilt several times, they too often prove more unsatisfactory to their owners than would new vessels. The only portion of the book that invites criticism is that upon gastric disorders, in which the subject of testing the stomach contents is not considered. We presume, however, that the eighth edition will contain information in regard to this important advance in medical diagnosis. The book stands to-day, as it has always stood, an honor to American medical authorship; a trusted guide to the practitioner; and a credit to the eminent teacher who produced it. In proof of its usefulness and accuracy, it need only be said that a French translation has just appeared, and that a second edition of the German edition has been called for.

Dr. Da Costa's long experience as a teacher in Jefferson College has fitted him in a peculiarly thorough manner for knowing exactly what the student and physician need, and the result is mirrored more clearly than ever in this, the latest edition of his book.

NEWS ITEMS.

The Medical Colleges of the United States.—The following table has been prepared from the *Report of the Commissioners of Education* for the year 1888–89.

	Number of schools.	Professors and instructors.	Students.	No. of graduates at commencement of 1889.	Amount of State or municipal aid received within a year.	Benefactions.
Regular,	92	1907	12,338	3296	$24,820	$87,139
Eclectic,	9	116	669	186	.....	5,200
Homeopathic,	14	249	1,159	312	25,000	16,004
Physio-medical,	1	11	15	5	.....	200
Post-Graduate,	7	261	909	25	.....	19,600

The Section on Ophthalmology at the Pan-American Medical Congress.—This Section has been organized by the election of Dr. Julian J. Chisolm, of Baltimore, as Executive Chairman, Dr. George M. Gould, of Philadelphia, as English-speaking Secretary, and Dr. J. Harries Pierpont, of Pensacola, Fla., as Spanish-speaking Secretary. The foreign secretaries of this Section so far appointed are: Dr. Barraza, Cordoba 1471, Buenos Ayres, the Argentine Republic; Dr. Hilario de Gonvêa, Rio de Janeiro, Brazil; Dr. G. H. Burnham, Toronto, Canada; Dr. Proto Gomez, Carrera 8, No. 370, Bogotá, U. S. of Colombia; Dr. Juan J. Ortega, Ciudad de Guatemala, Guatemala; Dr. Juan I. Urtecho, Calle Real, Ciudad Granada, Nicaragua; Dr. Enrique López, Obropia 51, Habana, Cuba; Dr. Joaquin de Salterain, Canelones 8, Montevideo, Uruguay.

Resident Physicianship at the Methodist Episcopal Hospital.—An examination for the position of resident physician in the Methodist Episcopal Hospital of Philadelphia will be held on Tuesday, March 29, 1892, at the Hospital, Broad and Wolfe Streets, Philadelphia, at 8 P.M.

The examination is open to both men and women; but applicants must, in accordance with the charter of the hospital, have the degree of bachelor of arts. Two resident physicians will be selected by the Trustees from the candidates who obtain the first four places in the examinations by the Medical Board.

Applications should be made to Dr. John B. Roberts, 1627 Walnut Street. Dr. Richard C. Norris, 1028 Spruce Street; Dr. William C. Hollopeter, 1408 N. Thirteenth Street; Dr. H. H. Kynett, 1728 Spring Garden Street.

International Periodical Congress of Gynecology and Obstetrics.—The Belgian Society of Gynecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynecology and Obstetrics," the first session of which will be held in Brussels, September 14 to 19 inclusive, 1892. Three leading questions will be offered for discussion:

1st. Pelvic Suppurations. Referee, Dr. Paul Segond, Paris.

2d. Extra-uterine Pregnancy. Referee, Dr. A. Martin, Berlin.

3d. Placenta Previa. Referee, Dr. Berry Hart, Edinburgh.

The fee for members participating in the first session will be thirty francs, which will entitle to a copy of the *Proceedings* of the Congress.

Founders (life membership) pay a fee of three hundred francs.

In connection with the Congress there will be an International Exposition of Instruments and Appliances pertaining to Gynecology and Obstetrics.

All communications pertaining to this Congress should be mailed directly to the American Secretary, Dr. F. Henrotin, at Chicago, Ill., who will promptly furnish all information. All notifications to be forwarded should be received by August 1st.

[1] Owing to an inexcusable inadvertence, this review is published at this late date.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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PHILADELPHIA.

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ORIGINAL ARTICLES.

PRE-ATAXIC TABES DORSALIS, WITH OPTIC-NERVE ATROPHY.

BY HOWELL T. PERSHING, M.Sc., M.D.,

PROFESSOR OF NERVOUS DISEASES IN THE GROSS MEDICAL COLLEGE, DENVER, COLORADO; PHYSICIAN TO THE ARAPAHOE COUNTY HOSPITAL AND TO ST. LUKE'S HOSPITAL.

THE following cases are reported because they belong to a well-defined variety of disease that is worthy of special discussion on account of certain peculiarities, both as to diagnosis and prognosis.

CASE I.—C. L., a printer; is thirty-eight years of age. His mother died of "neuralgia of the stomach." One of the mother's sisters was insane, and the patient's only sister is very nervous and excitable. He has used tobacco and malt liquors in moderation. He had a single venereal sore four years ago and several a year later. An eruption (diagnosticated syphilitic) was present a few months ago. For three years past he has had an annoying tremor during effort or excitement. Vision began to fail in the left eye in April, 1889, and grew steadily worse until January, 1890, when vision in the right eye also became much impaired, the left seeming to improve. Transient ptosis on the left side was noticed several times. The knee-jerks were found absent in November, 1889. Potence was lost soon after failure of vision. The man could read with the right eye up to June, 1890, when atropine was instilled, causing immediate loss of power to read, which did not return. During the summer and fall of 1890, there were shooting pains in the legs and occasional retention or involuntary evacuation of urine.

Present condition, November, 1890: Can barely see a hand close to face. Cannot count fingers. Pupils equal, moderately contracted; light reflex scarcely perceptible; accommodation reflex could not be tested. White atrophy of both optic discs.

Knee-jerks entirely absent, even with Jendrassik's reinforcement. Plantar and cremasteric reflexes present; abdominal excessive. Station with eyes closed normal; stands on either foot. Walks backward perfectly well. No ataxia of arms or legs, unless in left leg in so slight a degree as to be doubtful. No intention-tremor is present, no paralysis, and no wasting. No defect in touch, pain, posture, temperature, or muscular sense is detected by careful examination. Hearing is normal for watch and tuning-fork, and the auditory field is not limited for high notes. Taste and smell are normal. The pharynx and larynx are normal, except that the reflexes are heightened. He complains of shooting pains, especially in the left thigh and testicle, though these are not severe. There is a feeling of tremor in the intestines and genitals; a numbness of the buttocks and rectum; a lack of normal sensation during defecation, and, at times, involuntary defecation. Normal action of the bladder and potence have returned, apparently owing to the administration of strychnine.

On January 31, 1891, he reported that two nights previously his breathing was suddenly stopped by what seemed an obstruction in the throat that could not be cleared by coughing; he was greatly alarmed and trembled violently. (Laryngeal crisis.)

CASE II.—E. P., a shoemaker; is fifty-three years of age, and married. His mother died at seventy-six, of "softening of the brain." Father, brothers, and sisters are said to be very nervous. Two brothers and three sisters died of pulmonary tuberculosis, one brother of diabetes. He has been a constant though moderate chewer and smoker, but has never been a drinker, and there is no syphilitic history, though he admits exposure.

Sudden blurring of vision in the left eye occurred five years ago, which was said at the eye dispensary to be due to an affection of the nerve. Recovery took place in a week. For four years past he has had annoying sensations in the soles, palms, instep, and inside of elbow, making it difficult to keep still. The thighs feel as though abraded in front. Sometimes the touch of the bed-clothes is unendurable. In July, 1890, the left eye again began to fail, and has grown worse. A few months later the right was affected. Of late there has been drooping of the left lid. Difficulty in urination is complained of, there being no force to the stream. Putting the hands in cold water causes involuntary micturition. Potence is much diminished; at times there is absolute impotence. He has had hard coughing spells, without apparent cause and without expectoration.

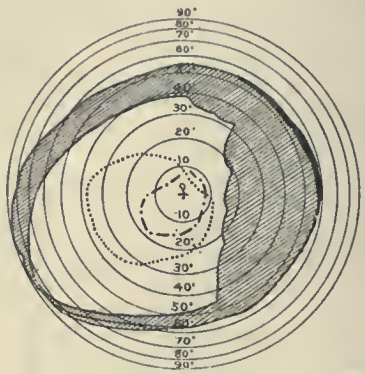
The present condition, January 15, 1891, is as follows: Vision: right, $\frac{5}{6}$; left, $\frac{5}{10}$. The fields are much contracted, both for white and colors, especially on the nasal side. (See the annexed diagram.) Both optic papillæ are sharply defined and of a grayish tint. The right pupil reacts well to light; the left is contracted, irregular in contour, with light reaction barely perceptible. Both react well in convergence. The knee-jerks are present, and are increased by reinforcement, but the left is considerably less than the right, which is rather below the average. With eyes closed he can stand on either foot, and walks well. There is no ataxia of the arms or legs; no paralysis or wasting; no defect in touch, temperature, or posture-sense. Hearing: right, $\frac{5}{60}$; left, $\frac{1}{6}\frac{2}{3}$. There is otitis media of both sides. Bone-conduction is good. Taste and smell are normal. Laryngoscopic examination is unsat-

isfactory, the pharyngeal reflex being excessive. Heart and lungs are normal.

On February 3, 1891, vision in the right eye has fallen to $\frac{5}{10}$, and the field is further narrowed in the upper part.

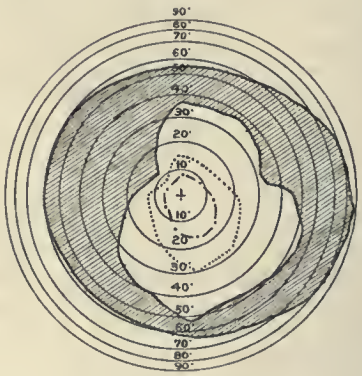
June 3, vision—right, $\frac{1}{50}$; left, $\frac{5}{10}$. The patient has a band-like feeling about the head. The knee-jerks are present.

FIG. 1.



Left eye. Visual field.

FIG. 2.



Right eye. Visual field.

The striking feature about each of these cases is the presence of decided atrophy of the optic nerve with the absence of ataxia, and even of Romberg's symptom. The spinal symptoms were so unobtrusive that both patients sought relief only for failing sight, and in one case the knee-jerks still remain, though diminished and unequal. That optic atrophy prevents the occurrence of other symptoms seems at first sight most improbable, yet there is evidence that in some way it does so. It has long been known that optic atrophy may for years precede other symptoms of tabes. Charcot[1] describes a case of blindness due to primary atrophy, with lightning-pains occurring three years later, followed shortly by gastric crises, but with no difficulty in locomotion as late as twenty-nine years after the onset. In another of his cases blindness, due to atrophy, came on simultaneously with lightning-pains, gastric crises following, but there was no incoördination fifteen years later. He says other such cases might be cited, and reaffirms, as amply supported by increased experience, a former statement that the great majority of all the patients coming into the Salpêtrière with amaurosis afterward develop the symptoms of tabes, though perhaps not until ten or fifteen years later. Had the knee-jerk then been known, its loss would doubtless have led to a somewhat earlier diagnosis. Gowers[1] says: "So marked, indeed, is the contrast between the course of different symptoms that it suggests a certain alternative tendency. If optic-nerve atrophy develops, the spinal symptoms in most cases remain stationary. So, too, of visceral crises. I have known gastric crises to cease when the incoördination began to develop." Walton,[2] of Boston, has collected and reported evidence supporting this statement. After quoting Charcot and citing cases of Gowers and Buzzard, in which optic atrophy, pains, and loss of knee-jerk were the only symptoms for fifteen, sixteen, and twenty years, respectively, he gives an analysis of 66 cases of tabes. Of these, 14 presented optic atrophy, and 6 others, not examined with the ophthalmoscope, loss of sight. Of the 14 with atrophy, 3 exhibited no ataxia, 5 were slightly ataxic, 3 were decidedly ataxic, and, in 3 others, the symptom is not mentioned. The duration of the 8 non-ataxic or slightly ataxic cases was 2, 3, 4, 7, 8, 10, 12, and 12 years, respectively. The general result of this investigation is that in the presence of atrophy of the optic nerves there is a remarkable abeyance of other symptoms, especially of ataxia.

To obtain further evidence as to the practical importance of this apparent antagonism between symptoms, I have studied a series of 40 cases of tabes dorsalis, reported by Marina,[3] of Trieste. These are especially suitable, because, while this particular question is not touched upon (aural and laryngeal symptoms being the special object of research), the patients were generally thoroughly examined. Of these cases ataxia was present in 22, absent in 18. The separation of ataxia and optic-nerve atrophy is shown in the following table:

	Ataxia present.	Ataxia absent.
Advanced optic atrophy (recognized by ophthalmoscope, fields limited, vision one-third or less)	2	9
Beginning atrophy	6	5
Discs normal	3	3
No failure of vision noted; no ophthalmoscopic examination	11	1
	22	18

[1] Leçons sur les Maladies du Système Nerveux, t. ii, pp. 40–46.

[1] Diseases of the Nervous System, Am. ed., p. 102.

[2] "Latency of Ataxic Symptoms in Cases of Optic Atrophy," Boston Med. and Surg. Journ., Aug. 1, 1889.

[3] Archiv für Psychiatrie, Band xxi, Heft 1.

The preponderance of advanced atrophy in the non-ataxic cases is evidently too great to be accidental. Nor is it accidental that of 12 cases in which the ophthalmoscope was not used, 11 were ataxic. The pupils were tested in all of these, and muscular insufficiencies noted in some, so that any failure of sight would also have been noted. It is fair, then, to assume that this group does not include cases of advanced atrophy, and it probably does include most of those with normal optic nerves. One of the two ataxic cases with advanced atrophy was remarkable for a very wide range of symptoms and rapid course; paraparesis and muscular atrophy, as well as ataxia, appearing early. The other was of seven years' duration, and had run the usual course. Up to the last examination the duration of the 9 non-ataxic cases with optic atrophy was 1, 1, 2, 3½, 5, 5, 6, and 10 years (in one not stated), respectively, averaging over 4 years, which is longer than the average time after onset in which ataxia was found on examination in the ataxic cases, although it had doubtless been present at a considerably earlier date in many of them. But, aside from the question of duration, it is evident that if, in a sufficiently large number of cases, there is a greater proportion with optic atrophy in the pre-ataxic stage, then the atrophy must in some way be associated with the prevention of ataxia; for atrophy never disappears, and if these cases went on into the ataxic stage at the usual time it would still be found in the same proportion.

It would be important to know whether degeneration of the auditory nerve in tabes is also more frequent in non-ataxic cases. This is difficult to ascertain because disease of the inner ear is not always easy to diagnosticate, and does not necessarily mean degeneration of the nerve, unless the auditory field is progressively limited.

The ears were examined with unusual care in all of Marina's cases. Disease of the inner ear was diagnosticated in 13 and suspected in 2 of the 18 non-ataxic cases (72 or 83 per cent.); of the 22 ataxic cases it was diagnosticated in 9 and suspected in 4 (41 or 59 per cent.). It, therefore, appears as if disease of the inner ear to some extent excluded ataxia. On the other hand, laryngeal palsies were found twice as often in the ataxic cases as in the non-ataxic.

Romberg's symptom was entirely absent from 7 of Marina's cases. Of these, all had inner-ear disease except one, in which it was doubtful; 4 had advanced optic atrophy; 1 beginning atrophy; 2 normal discs. Contrast this with 29 cases in which, with Romberg's symptom fully developed, there were 14 with inner-ear disease and 5 with advanced atrophy.

The knee-jerk was absent or unequally diminished in the entire series. Of 7 cases with some remnant of it, advanced optic atrophy was present in 2; beginning atrophy in 3; disease of the inner ear in 4, suspected in 2 more; either advanced atrophy or inner-ear disease was present in all except one, and in that one inner-ear disease was suspected.

Walton[1] found the knee-jerk present to some extent in 4 of 9 cases of tabes with optic atrophy; and it was normal in another with loss of sight, but no ophthalmoscopic examination was made. In one of Gowers's[2] cases "all the symptoms of tabes passed away, the knee-jerk returned, optic nerve atrophy ceased to advance, but the patient became insane." It is probable, therefore, that even the loss of knee-jerk may be at least delayed by activity of the disease in the optic or auditory nerve or cerebral cortex. The proof is not likely to be proportionate to the fact, because the presence of the knee-jerk is commonly regarded as excluding tabes.

Dr. L. C. Gray[3] has reported a case of tabes complicated by general paresis, in which the occurrence of mental hebetude seemed to cause an improvement in the tabetic symptoms.

If it be true that there is any mutual exclusiveness in the symptoms of tabes, it not only suggests interesting pathologic reflections, but necessitates some modification in the existing rules of diagnosis. Thus the presence of optic atrophy makes a comparatively small amount of additional evidence sufficient to establish the diagnosis of tabes. Indeed, primary bilateral atrophy alone makes the existence of tabes probable. Nettleship[4] found that of 76 cases of primary bilateral atrophy 58 certainly, and 10 more probably (76 or 90 per cent.), were due to the same causes that give rise to degenerative changes in the spinal cord and brain. Uhthoff[5] found that of 83 cases of atrophy, not neuritic or due to causes in the orbit, 69 (83 per cent.) were due to spinal or cerebral disease. Peltesohn[6] found that of 98 cases of spinal or cerebro-spinal atrophy occurring in Hirschberg's clinic, 78 (80 per cent.) were cases of tabes dorsalis. Combining these statistics it appears that in a case of bilateral atrophy without assignable cause the chances are two to one that it is a symptom of tabes. If the knee-jerk is gone, the diagnosis is practically certain. But the presence of the knee-jerk in such a case by no means excludes tabes. True, Gowers[7] says that if it is present the diagnosis can be justified only by

[1] Op. cit.
[2] Diseases of the Nervous System, Am. ed., p. 302.
[3] New York Neurological Society, October 1, 1889 reported in THE MEDICAL NEWS, November, 2, 1889.
[4] Quoted by George A. Berry, "Diseases of the Eye," Am. ed., p. 315.
[5] Ibid. [6] Archives of Ophthalmology, xvi.
[7] Loc. cit., p. 316.

distinct and characteristic incoördination. But this statement is certainly ultra-conservative. No one doubts that the knee-jerk does remain for a time after the onset of true tabes. Indeed, it is probably exaggerated at first.[1] The only question is whether the disease can be recognized in the absence of ataxia, with the knee-jerk present. I think it can, if there is a characteristic combination of minor symptoms, and especially if the negative evidence is neutralized by the presence of such a condition as optic atrophy, which has been shown to exclude the cardinal symptoms to a certain extent.

In the second case that I have just reported, we have the presence of the knee-jerks and complete absence of Romberg's symptom, ataxia, and anesthesia; but against this is to be placed optic atrophy, the Argyll-Robertson pupil, transient ptosis, paresis of the bladder, occasional incontinence of urine and impotence, so that I think the diagnosis is fully justified, even without taking into account the unequal diminution of the knee-jerks.

But little need be said as to the prognosis in this variety of tabes. As to the spinal symptoms, it is certainly comparatively good. Gowers[2] says that most cases do not go beyond the first stage. Unfortunately the atrophy usually progresses to nearly complete blindness, and it would be no consolation to the unfortunate patient to tell him that he will probably be saved from the tortures of a spinal disease, as yet unknown to him, at the expense of sight, the loss of which he dreads above all things. Still, the earlier the diagnosis the less gloomy is the outlook, for unhygienic conditions may be altered and judicious treatment may aid in arresting the morbid process.

P. S.—In the interval between writing this article and reading the proof, I have seen two cases of optic atrophy due to tabes, and a third probably of the same nature. I herewith briefly mention them.

A. S., a male, fifty-eight years old, had a severe fall twenty years ago. Lightning pains appeared soon afterward. He had to abandon his trade, six years ago, on account of failing vision. There is atrophy of both discs; the visual fields are contracted; vision is $\frac{5}{20}$ in each eye; Argyll-Robertson pupil is present; micturition is retarded. The knee-jerks are absent. There is *no ataxia* and *no Romberg's symptom.*

A. G., a male, forty-five years old, noticed that his sight began to fail twenty-five years ago. He has had shooting pains for at least fifteen years past. Vision: on the right there is light-perception; on the left he counts fingers at one foot. The pupils are unequal; Argyll-Robertson reaction is present. The knee-jerks are absent. Romberg's symptom is present. There is very slight, though distinct, ataxia of the arms and legs. The patient had been twice examined by pension-examiners, but complained of nothing but loss of sight. He was much surprised when told that he had a grave form of nervous disease.

G. E., a male, forty-eight years old, had noticed that vision began to fail two years ago. Vision: on the right he cannot count fingers, but he sees the hand; on left, $\frac{5}{60}$. The optic discs are atrophied. The pupils are contracted; they react slightly to light, but well in accommodation. The knee-jerks are sluggish. There are no shooting pains; no Romberg's symptom; no ataxia. The man feels perfectly well, except for his loss of sight.

[1] Weir Mitchell, THE MEDICAL NEWS, April 21, 1888.

[2] Loc. cit., p. 319.

SHOULD TUBERCULIN BE ADMINISTERED IN PRIVATE PRACTICE?

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I AM frequently in receipt of inquiries from physicians who contemplate using tuberculin, as to my method of administration, and I note from such inquiries, and also from various publications in the medical journals, that even now an amount of experimentation with this agent is carried out which, in my opinion, is in no wise justifiable, for, if anything is apparent in the voluminous literature upon the subject, as to its practical application, it is that, apart from the favorable results observed, it may become a source of serious injury, if improperly given, or if its effects are not thoroughly understood.

The remedy may also fail to accomplish good results, and disaster may follow its use, when the general management and supervision of the case are in any way faulty; and under the most favorable conditions of dosage, selection of cases, and perfect management, other means are frequently essential in order to effect a recovery, the remedy constituting an aid more or less important, but not an unfailing specific, to the administration of which a cure must necessarily follow.

I believe that my experience of more than a year justifies me now in repeating the statement that the remedy *can be given* with the avoidance of every danger, unpleasant symptom, or discomfort, in suitable cases, under proper management and supervision, and I believe that its influence is then beneficial, not alone because *my* results have been highly satisfactory, but also because trustworthy and able observers have recorded excellent results in cases in which the additional aid of climate and other treatment were not possible factors, as has been the case with my own patients.

Although there are now cases recorded amounting to thousands, in which apparent recovery, or unusual improvement, is claimed to have resulted from the use of the remedy by authorities whom we cannot doubt, and from the records and descriptions

of the cases, the remedy stands in reasonable relation to the cure or improvement. Now, although the curative effects have had frequent corroboration by ocular demonstration of healed tuberculous processes in almost every organ of the body, it must be conceded that if such an effect were demonstrated to be undoubtedly the result of tuberculin employed in only one single case that was truly cured or improved by the remedy, then, under the same conditions, a cure or improvement may again result; and failure to accomplish it must be sought either in the selection of cases, the method of application, faulty management, or conduct of patients while being treated, in the response of the particular organism to the remedy, or finally, in the variations and possible deterioration of the tuberculin itself, but certainly not in its value as a curative agent.

The object of this paper is the consideration of the feasibility of employing tuberculin in private practice, and thus enlarging its usefulness; and by considering the conditions stated, upon which I claim that success or failure must depend, the reader can answer for himself whether or not he shall employ tuberculin at all, or make use of it in hospital or private practice.

1. *The proper selection of cases.* The patient must be in fair physical condition. A loss of more than 20 per cent. of his average weight in health, especially if he is still losing, should for the time exclude him from the treatment until the cause for the progressive emaciation is found and removed.

He must be practically free from fever. As long as he reaches an evening maximum of 101° F., or more, the greatest circumspection would certainly be necessary.

There should be a fairly good heart-action. A pulse-rate (during rest) averaging 112 or more for the time contra-indicates the use of the remedy, as does also the existence of a considerable degree of anemia.

It goes without saying, that the earlier the stage of the disease, the smaller the area of lung involved, the better are the prospects. Regardless of the particular advance of the disease in the particular lung-portion, the vital capacity is the best criterion; if this should have fallen below one-third of the amount which, according to my published table,[1] corresponds to the patient's height and sex, the case should for the time be excluded, until other means shall have accomplished an improvement in this respect.

The presence of considerable fibro-plastic pleural exudations of tuberculous origin requires the greatest caution; cases with infiltration, already giving evidence of beginning breaking down, accompanied by chills and fever, must certainly be excluded.

The presence of a cavity is of itself no contra-indication, but acute inflammatory processes in or about the cavity exclude the case until these are arrested by other means.

Amyloid degeneration in the kidney, liver, and intestine exclude the case.

Tuberculous processes of other organs do not constitute contra-indications in themselves, except when located in the joints and such localities where no outward discharge is possible, unless in the earliest periods of their development; in all other stages, surgical means must precede the employment of tuberculin. Only in the milder cases of intestinal tuberculosis can tuberculin be employed with a prospect of success, and the doses must be very small, beginning with one-twentieth of a milligram.

The most favorable cases are, therefore, those without fever, or with a maximum of not more than 100° F., therefore without acute processes, in still a fair condition of general nutrition, and a vital capacity of two-thirds or more of the amount corresponding to sex and height, a relatively good heart-action and good digestive organs; under other conditions other means must precede, and frequently have succeeded in my hands in preparing the case, so that the treatment with tuberculin can subsequently be employed with benefit.

2. *The proper mode of administration.* There must precede a period of at least a week or more for study, investigation, and observation of the case. No statement of the patient as to his previous condition must be accepted in lieu of such study. The temperature and pulse must be observed and recorded every two hours, the sputum and urine must be examined. At least two comparative physical examinations should be on record before beginning the treatment.

The first, or trial dose, should never exceed one-fifth of a milligram. One-tenth is better in cases in which caution is advised in their selection.

The increase is then by one-tenths up to one milligram, then by halves to five milligrams, finally by milligrams up to ten.

After an injection the patient must be kept free from mental excitement and physical exertion, and all influences must be eliminated that may influence pulse, temperature, or the local tuberculous process.

Records of physical examinations, pulse, fever, respiration, appetite, urine, weight, etc., must go hand-in-hand with the continuance of the treatment.

No dose is ever to be increased until no local response has been manifest to the two preceding doses. General symptoms, especially chill or fever, must never be produced.

The remedy is thus given daily, or every other

[1] Gaillard's Medical Journal, October, 1891.

day, according to the effect produced in the local tuberculous process. All general effects, even when transient, and all local effects lasting more than twenty-four hours, are to be considered as due to an overdose, and require an intermission until they have been absent at least twenty-four hours, and then the dose is to be diminished to the dose that last given had produced no effect upon two successive administrations.

It may be found that the patient now responds to this last dose also, after a local, stimulating, or irritative effect upon the tuberculous process has once been set up, and in such case the preceding dose which had no effect must be adopted. I have thus lately seen a response to seven, then to six, to five, and last to four, but none to three milligrams, but no response again until ten milligrams were gradually reached. At no time was there fever, but the effect appeared in the local tuberculous process, with increased cough, and was manifest by a temporary increase in the physical phenomena elicited by comparison with the previous examination on record, made after the effect of the last active dose had subsided.

In most cases treated by me lately ten milligrams were not exceeded. Frequently I stop at five milligrams, allow an intermission of several weeks, and then repeat the treatment, under a more rapid increase until the previous maximum dose is again reached.

The evidences of successful treatment appear in the course of from two to six weeks, and consist in the subsidence of local auscultatory phenomena, such as râles and crepitation; the harsh, rude, or bronchial respiration becomes less marked, a suppressed, slightly vesicular murmur gradually taking its place; the percussion-phenomena indicate increasing fibroid or connective-tissue changes; cavities become clear, free of râles, and shrink; the patient increases in weight and strength; cough and expectoration become less, and he is sensible of a change for the better.

The occurrence of increasing anemia indicates the combination of oxygen-inhalations with the internal use of preparations of iron, and a reduction in the dose of tuberculin until the blood-making processes improve.

When all moist and dry auscultatory phenomena have disappeared, and fibroid changes are clearly manifest, it is best to stop the administration of the remedy and keep the case under careful observation.

Such administration means almost constant professional attention, daily physical examination; and in cases showing even a slight local reaction, the examinations are even more frequent—two or three times the same day. While no harm may result in a particular case, anything less means to invite relapses and injurious consequences as a result of the treatment by which we hope to, and can obtain benefit. Unless so managed, a slight reaction may escape us, leading with increasing doses to constitutional symptoms, at a time when the indication really is for intermission and subsequent decrease in dosage, and disaster may then be the consequence, the blame falling to the remedy, instead of where it properly belongs. Similar results follow the exhibition of other remedies, when their effects are not carefully observed.

It may be urged that good results have been observed from the use of tuberculin with much less care and caution than I recommend, and this I concede freely. Indeed, such results have followed when the conditions that I strive to avoid by the greatest care and circumspection have purposely been induced. That was, however, the particular patient's "good luck," while in many other cases injury and indifferent results were the consequence of the early experimental and reckless use of the remedy.

In over 4000 injections given by me upon the plan I advocate, I have never seen an injury or even discomfort in a single case, which fact alone would justify all the care and precautions adopted; and with the exception of two or three cases in my early experience, which, as I now understand the selection of cases, were unsuitable for the treatment, improvement, and in many cases permanent arrest and apparent cures have been accomplished, and are still being accomplished, and in the apparently cured cases no relapses have as yet occurred. In no single instance have I failed to bring about improvement.

3. *Faulty management.* In my papers on the "Management of Pulmonary Tuberculosis,"[1] and the "Cure of Pulmonary Tuberculosis upon the Principle of Nutrition,"[2] I defined what constitues the proper management of a patient suffering from pulmonary tuberculosis. Such management is prerequisite, no matter what special treatment is carried out in addition. If we use tuberculin we should, if anything, increase our general precautions to avoid conditions that favor relapses, because with it as well as with any other method, success depends upon maintaining and increasing the patient's nutritive processes, because apart from other dangers likely to follow, any general or prolonged local reaction reduces the patient in weight and strength, and otherwise interferes with his nutrition. To any physician who has closely observed not only the disease, but also the subject of the disease—*the patient*—my statement suffices that consumptive patients are constantly committing errors of various sorts, which are more or

[1] Therapeutic Gazette, August 15, 1889.
[2] Dietetic Gazette, November and December, 1891.

less opposed to the principles that I claim are the bases for success, and neither tuberculin nor any other remedy can protect them from the ill, and sometimes serious or even fatal effects of their errors and indiscretions. On the contrary, the dangers may be increased by the use of tuberculin, at least with some patients, when it shows a decided effect upon the heart-action.

To prevent these, in office or general practice, the patient must be either one of such extraordinary intelligence and unswerving determination as we seldom or never see, or else his case must be an unusually favorable one by reason of an excellent constitution and exceptional recuperative powers. Such patients, however, are not often the subjects of pulmonary tuberculosis.

I find in actual experience, based upon many hundreds of patients, that advice and restraint in one direction or other, and appeals to their determination and steadfast purposes for recovery, are, to a varying degree, required with all patients, and that even then slips occur that throw obstacles in the path of recovery. Conditions calculated to prevent injuries, in the way of personal surroundings and matters of hygiene, comfort, diet, clothing, etc., are seldom secured or enough appreciated by patients in their own homes, or at the boarding-houses and hotels of climatic resorts; neither can the attending physician be constantly present to show and direct the way.

Such being the case under any circumstances the question now arises, Shall we administer so subtle a remedy as tuberculin appears to be to patients in our offices, or upon visits at their residences, and then trust to good luck that the remedy will act favorably?

I doubt that any physician will answer in the affirmative, who, apart from the use of tuberculin, can appreciate the manifold causes that may aggravate the physical phenomena and symptoms in the course of the affection; and if the remedy is to be given only under the precautions I have found essential, how can there be an intelligent procedure as to the necessary repetition and increase of doses?

The fact that, in a given case, not disaster but good results have followed careless administration is no argument whatever in its favor.

I have known of a capital operation performed upon a filthy patient, in a dirty room, by a surgeon who was wanting not only in his own personal cleanliness, but who was utterly ignorant of every principle of antisepsis, and of the modern principles of the treatment of wounds, who during part of the operation had his instruments upon the floor of the room, or upon the unclean bed and table, who applied dirty bandages over and over again, and yet this patient made a good recovery. But who would willingly and knowingly entrust his case to such care, and where is the surgeon that can countenance such work?

In pulmonary tuberculosis, and in other diseases as well, the chances of improvement and recovery become less in proportion as we relinquish advantages that can aid in the attainment of these ends; and so long as an institution can show greatly better results than are obtained in private practice, just so long must the treatment there have the preference, the importance of its adoption depending upon the difference in the results. If, then, tuberculin can be administered more intelligently and more successfully in institutions and hospitals than in private practice, its use should be confined to them, at least until it can be shown that ill effects do not attend its use in private practice.

When good results, and *no ill effects*, from the remedy appear in private practice, then it may become a matter of expediency, but the choice must ever fall to the institution until the results are as good without the safeguards that there surround the patient.

However, every institution is not necessarily a good one, and differences in results may be expected according to individual management, and the painstaking scientific methods of professional administration.

4. *Other aids to recovery.* Apart from a correct and individual management, there are many other aids to the successful treatment of pulmonary tuberculosis that are as important, and under certain conditions more important, than the use of tuberculin, or that of other remedies employed for their effect upon the local condition of the lung.

These include the proper use of climate, a rational treatment of the fever by rest, hydropathic methods and stimulants, singly or combined, to the almost entire avoidance of drug-antipyretics.

It is utterly impossible to successfully carry out such procedures, except in an institution. The treatment of gastric and intestinal catarrh, in addition to a proper diet, frequently requires washing out and direct medication of the stomach, chemical analysis of its contents, etc.—things very difficult to do when the patient needs to be visited at his home.

The pneumatic cabinet in my hands accomplishes good results, and in some cases is an aid I would be entirely unwilling to dispense with. I employ it with evident and well-marked benefit in most cases that receive tuberculin, when no special contra-indication exists.

Because the patient takes tuberculin, or any other remedy, local treatment of affections of the nose and throat, and catarrhal states of the bronchi, are not to be neglected any more than the sys-

tematic out-of-door life in a favorable climate, and the results must in proportion be better as we intelligently combine the various means at our disposal, rather than depend upon this or the other single effort.

I am sure the intelligent reader who gives these matters thought and reflection will readily see that from my position we have in tuberculin only an additional aid in our battle with tuberculosis; one, however, that needs the greatest care and circumspection in its proper use, and that, if administered without the necessary safeguards, may become a greater source of evil than of good.

It is, perhaps, unfortunate that I am the director of an institution for tuberculous patients, because my motives in urging treatment of such with or without tuberculin in such establishments whenever possible, could be easily misunderstood; but without such connection my experience could never have been possible, and I could not have been able to learn and appreciate many things that would have passed unobserved but for the close and constant relation with a large number of such patients.

Dr. Trudeau, of Saranac Lake, and others who have under their charge *charitable* institutions in which the number of patients is of no personal advantage to the director, have all arrived at the same conclusions, being as much in favor of the treatment in institutions as I; and interested members of the profession, who now advise tuberculous patients to pursue other courses, can learn the advantages even without establishing institutions of their own, by comparison of the results obtained.

In this connection I may say that I have never been willing to administer tuberculin to patients living outside of my institution, for the reasons already stated, although I have had, and still have, many applicants for such treatment, and could easily have given the time for such routine injections, the fees for which would have been a considerable personal gain. Neither have the charges to patients in my institution been increased, from the beginning to the present time, because of the additional administration of this remedy, although the amount of professional labors with such cases have been thereby enormously increased.

With the subsiding prejudice created, after most extravagant expectations, by its failure to accomplish impossible results, and by its frequently observed injurious effects, clearly demonstrated by me[1] and others to have been the result of the inexperience of those who used it in its early history upon hopelessly advanced cases, in over-doses, and without the essential precautions, the remedy is now once more growing in favor, especially in Germany, and other places where its real merits are being established by clinical and experimental results.[1] I have had occasion to observe this with prejudiced patients who were admitted to my institution, conditioning that they should not be given tuberculin before it was even proposed to do so. Indeed, there never has been a single patient who, on observing the marked and rapid improvement in other patients receiving the remedy, and the entire absence of any discomfort from its use, did not, without recommendation on my part, ask for its administration, and repeatedly beg for it, when, in my judgment, its use was contra-indicated or unnecessary.

In view of this revival of confidence, I sincerely hope that I may have contributed my share to its clinical understanding, and that my experience with tuberculin may serve other members of the profession sufficiently, so that no sentiment or other motive will be allowed to interfere in withholding the remedy from unsuitable cases, or in adopting its administration with any less precaution than I have found essential.

[1] Weekly Medical Review, August 22, 1891.

NASO-PHARYNGEAL STENOSIS.[2]

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BY pharyngeal stenosis is meant any of the states in which the membrane is thickened, so that it encroaches to any extent on the normal caliber of the pharyngeal space, be the thickening of the membrane caused by chronic engorgement of its vascular supply, hypertrophy of its glandular tissue, or deposits of inflammatory products within its structure proper. There is no practitioner, especially in our seaboard cities or towns, that does not come in almost daily contact with these cases. Their extreme prevalence, however, does not tend to make their average treatment meet with the measure of success that is desirable. The result of this non-success on the part of the general practitioner is to send great numbers of cases into the hands of the specialist.

The specialist must always be dependent on his confrères in the wider field of general practice for a large portion of his work; yet it would seem that referred cases should properly consist of that rather small proportion that requires special technique in operative procedures for its relief; and certainly a great many cases come to the specialist that can be relieved, if not cured, by some simple methods rightly applied.

[1] Southern Medical Record, September, 1891; Deutsche med. Wochenschrift, November 19, 1891; Medical World, December, 1891.

[2] Read at a meeting of the Long Island Medical Society, November 5, 1891.

It may be useless, but it is more accurate, to define the naso-pharyngeal cavity as that space (entirely out of direct vision), the lower boundary of which is on a level with the free border of the soft palate; the upper boundary of which is limited by the basilar portion of the occipital bone and body of the sphenoid bone; the posterior limit of which is the vertebral column and muscles; the lateral boundaries of which are the pharyngeal constrictors and other muscles of the neck. This space opens anteriorly into the posterior nares, and faces the posterior border of the septum and extremities of the turbinated bodies. This space provides a passage for the air on its way to the lungs through the nose. It contains a great quantity of glandular tissue, which moistens to some extent the air so inspired. During the process of deglutition this glandular tissue is excited, its ordinary secretion is increased in amount, and lubricates the mucous membrane of this portion of the alimentary tract with viscid mucus. The naso-pharyngeal cavity thus belongs, in a specialized sense, to the alimentary tract, and, in a general way, is part of the respiratory tract. Its disorders thus become a source of considerable importance in their bearing on both normal respiration and normal digestion. It is thus easy to appreciate how, conversely, conditions of abnormal quality, density, etc., of air impinging upon its walls, and also conditions of gastric derangement, most profoundly affect this cavity.

The practical importance of a narrowing of this very important section of the respiratory tract is at once rendered clear by considering for a moment the mechanism of respiration.

The chest is practically a *cylinder* for the reception of air necessary for oxygenating blood; the diaphragm, a piston; the nasal canal, part of the tube of normal communication with the air outside. If we give such a motion to the piston as shall increase the inter-cylindrical space, the inter-cylindrical pressure will decrease in direct proportion to the rapidity of the motion of the piston, and in direct proportion to the size of the conducting tube. In other words, while the increase of inter-cylindrical space is constant, the smaller the conducting tube the less the atmospheric pressure in the cylinder; and the larger the canal the nearer the inter-cylindrical pressure will approach the outside atmospheric pressure. Consequently, when we have the caliber of the nasal canal narrowed, the motion of the diaphragm produces a condition of the inter-respiratory air, now less than its normal density, then greater than its normal density. In other words, it produces an alternate rarefaction and condensation of the inter-respiratory air.

This damaging influence, affecting first the glandular apparatus of the pharynx, has more effect on the whole surface of the respiratory mucous membrane than I think we are at first inclined to believe. The constant change of pressure produces first a tendency to congestion of the whole of the mucous membrane, and it also acts as an excitant to the glandular secreting apparatus. The former tends to a thickening through subsequent inflammatory deposit; the latter to an hypertrophy of glandular tissue. Thus we get increased secretion of mucus; changes in the voice, as indicated by loss of resonance; tendency to tire easily by thus giving the vocal cords more work to do; consequent hoarseness from resultant congestion of the cords. We also get changes in the hearing (often not noticeable to the patient himself, but demonstrable by the watch-tick or other test), due to partial closure of the pharyngeal opening of the Eustachian tubes by the hypertrophied membrane. A Eustachian catarrh is thus being directly induced by the alternation of lowered and heightened inter-pharyngeal air-pressure.

Aside from the deteriorating effect upon the pharyngeal functions of air of improper density, an improper quality plays an important part. This is forcibly illustrated in the cases of patients who suffer from abnormal secretions of the naso-pharynx while in our seaboard cities, but who are promptly relieved by going to the mountains, although the old symptoms manifest themselves immediately on their return. Hence, conditions of moisture are an aggravating if not a causative factor in these cases. There are doubtless other impalpable and unmeasurable factors in our climate, as, for example, salt spray, marsh gas, dust, etc., which irritate to no small extent the mucous membrane of the respiratory tract.

Treatment largely resolves itself into an appreciation of the causes of the hypertrophies of the naso-pharynx.

As a stricture of the urethra keeps up behind it a chronic inflammation with its relative discharge, so a stenosis of the *nasal passages* acts as a continued source of irritation to the mass of glands in the vault of the pharynx. Each of the many varieties of disorder producing nasal stenosis is, therefore, an exciting or an adjuvant cause for a naso-pharyngitis.

The importance of this fact in the treatment of *all* chronic inflammations of the respiratory tract, it seems to me, cannot be over-estimated. The naso-pharynx, when suffering from a stenosis, either partial, as in chronic congestion, or complete, as in adenoid hypertrophies, presents, with varying proportions, indications for treatment of—first, abnormal secretions; second, improper conveyance of air to, and preparation of air for the lungs.

Conditions of improper conveyance of air, of

improper preparation of air for the lungs, and of abnormal secretion, should be subjected to treatment directed to—first, the abnormal condition of the secreting apparatus; and second, to the stenosis.

Of course, the most common point of narrowing is in the nasal cavity; and while this demands its own treatment, its treatment does not affect the stenotic condition of the pharynx which it has aggravated, or caused. The same is true of any of the other causative factors of pharyngeal stenosis. In fact, it has been a matter of observation by patients that secretions of the pharynx seem to be *increased* after successful treatment of a nasal stenosis. This error is made simply because the mucus secreted by the hypertrophied glandular tissue of the pharynx is more easily dislodged when the column of air inhaled through the nose is of a greater caliber.

In directing any form of treatment to the naso-pharynx it is, perhaps, useless to emphasize the importance of accurate appreciation of both the *degree* and the *situation* of the stenosis.

One form especially distinguishable is that in which the area of greatest stenosis is situated immediately at the posterior, or pharyngeal, opening of the nares. These cases are, of course, associated with hypertrophy of the nasal mucous membrane.

We have one form of stenosis, once called Thornwaldt's disease, which is associated with the abnormal formation of a cyst-like cavity in the midst of the pharyngeal gland, containing pus or mucopus.

The pharyngeal gland (sometimes badly called third tonsil), in its acute as well as in its chronic inflammatory states, is the cause of partial stenosis. The temporary stenosis of acute catarrhal naso-pharyngitis is self-limited. The chronic naso-pharyngitis constantly presents symptoms of a greater or less degree of stenosis.

It is the excessive form of hypertrophy of this glandular tissue, constituting the so-called *adenoid growths*, that is so frequently met with in children.

These different forms of hypertrophy often originate from the diseases of childhood—for example, measles or scarlet fever. They are sometimes congenital. They are commonly concomitants of, or sequelæ to, hypertrophic rhinitis, and present an almost similar condition of the mucous membrane. Hypertrophic rhinitis is usually the result of repeated colds. In these cases the membrane becomes accustomed to a chronic congestion. The normal caliber of the arterioles is increased—at least, the resistance to any increase of arterial pressure is decreased—so that in addition to the deposit of connective tissue we have a condition of the mucous membrane abnormally responsive to a chilling of the body-surface.

Nearly all the *milder* forms of hypertrophy of the pharyngeal membrane result from abnormal conditions of the *nasal* mucous membrane; the air being on this account improperly prepared for respiration, becomes extremely irritating to the pharyngeal membrane, and hence the resulting pharyngitis.

As I have said, in order to proceed intelligently with our treatment, we should have a clear idea of first—the degree of stenosis; and second, the location of the point of greatest encroachment on the caliber of the pharynx. For this acquisition of objective symptoms most of our books on this and kindred topics refer us to our rhinoscopic mirrors. This method is not unattended with difficulty, and this fact alone, I have been more than once convinced, has been the cause of debarring many busy men from anything like a successful *modus operandi* in treating this condition. It is difficult, because the procedure depends so largely on the co-operation of the patient, as almost everyone thus treated requires some training in order to insure success. In most cases the first attempt at posterior rhinoscopy induces an involuntary attack of retching, which is usually sufficient to discourage any further procedure.

This condition of affairs regarding such an important and so commonly affected a portion of the anatomy, I do not consider warranted. We are apt, I think, to forget that we have a method of examination of the pharynx literally at our finger-tips, and one requiring no instrumental assistance whatever. The method I refer to is the simple introduction into the naso-pharynx of the forefinger. There seems to me to be no reason why, when for any reason a direct inspection of the pharynx with the rhinoscopic mirror is impracticable, we should not employ this method in routine practice.

The questions to be decided by our examination are: First, What is the condition of the pharyngeal mucous membrane? and second, Whether there is sufficient room in the pharynx for a proper method of breathing. These points are perfectly ascertainable by this method.

Treatment directed solely to the relief of the stenosis, in the cases depending for their etiology on such stenosis, though absolutely essential, is not sufficient for the removal of the changes once brought about in the glandular structure of the naso-pharynx. We must treat the hypertrophy of the membrane by methods aiming at the relief of such hypertrophy. It will not otherwise tend to a restoration to the normal state. The methods used will, of course, depend upon the degree of tissue-changes, the amount of tissue-thickening, and the position of greatest hypertrophy.

If the membrane is in a condition of constant

hyperemia or of constant congestion, simple applications of mild astringents, in the form of sprays, or of solutions applied with the cotton-holder, will be found effective.

In conditions of severer congestion with considerable thickening, it is necessary to use stronger astringents, in the form of powders, astringent solutions applied with a cotton-holder, or applications of caustics. When the hypertrophy has reached a condition that involves a considerable stenosis, with obstruction to the free passage of air, the removal of some of the superfluous tissue is called for. Here we may use caustics, corrosive acids, or the galvano-cautery, or other instrumental means. When we have the tissue completely filling the cavity, as in the condition called adenoid growths, or when the tissue is soft and easily broken down, it should be removed by instrumental means. Numberless instruments have been devised for this purpose, among the most useful of which I consider the various forms of forceps. These are constructed with a view to tearing away, rather than cutting the tissue. Some authorities consider them on this account rather unsurgical. The tissue is so soft, however, especially when of the adenoid variety, that forceps are well adapted to this purpose. There is less bleeding, too, than when a sharp-bladed instrument is used. The various curettes, manipulated either through the nose or the mouth, are exceedingly useful. When the hypertrophies exist around, or just within, the orifice of the posterior nares, the snare is especially useful.

No better instrument has been devised, I believe, for these soft masses than the fore-finger of the right hand, when the nail is sufficiently strong and sharp. It is especially useful in the cases of children, in which time is such an important factor. While using it no illumination is necessary, as the finger conveys to the operator all desirable information through the sense of touch.

In the cases in which it is desirable to use a caustic, either as a curative measure itself or following an instrumental removal of tissue, I have found acids to answer a useful purpose, especially chromic, nitric, and acetic acids. They are corrosive, however, and must be handled with care. It was with the view of eliminating the possibility of applying them to any other than the desired spot, that I had made a glass *porte-acid*. It is simply a glass tube, about ten inches in length, bent at about an inch and a quarter from its distal extremity, at about a right angle to the direction of its original axis, with a rather short curve. It is flanged at its distal extremity for the last quarter of an inch. Through its canal is passed a wire, the protruding proximal extremity of which is manipulated by the disengaged hand. The distal extremity of the wire is armed with the corrosive substance, and withdrawn into the flanged extremity of the tube. It is now entirely protected from contact with the tissues, and the instrument can be inserted into the fauces, and carried to the point in the pharynx which it is desired to cauterize. When this is done, one hand holds the instrument in position, and the other hand pushes the wire armed with the caustic against the tissue for the desirable length of time; or, if desired, sweeps over its surface. The wire is again withdrawn, and the instrument removed.

In using nitric or lactic acid, a pledget of cotton, saturated with the pure acid, is used. In using chromic or acetic acid, a few crystals are fused on the end of the wire.

The instrument can be made with an alcohol lamp and a glass tube.

It is of the utmost importance to discover and to remove the *cause* of pharyngeal stenosis in each individual case. This is especially to be emphasized when the cause is *nasal stenosis*, whether this obstruction consists of mucous membrane, bone, or cartilage. These cases, when successfully treated, give us some of the most satisfactory results in this department of surgery.

ANGINA PECTORIS.[1]

BY HERBERT D. BIXBY, M.D.,
OF GRANDVIEW, ILL.

THE sufferer from angina pectoris is without warning attacked by a sense of oppression in the precordial region, which is rapidly followed by a well-defined, severe pain, radiating over the left chest, sometimes to the right as well, and from the chest to the left shoulder, whence it extends into the arm and rarely into the forearm, and accompanied by a sense of suffocation. The pain may also shoot up the neck. The arm seems to be of enormous weight, and there is severe pain upon movement. No position in which it may be placed gives relief, while there is a disposition to relax the affected side by an inclination of the body. The face is pale, the features expressive of intense anguish. Respiration is restrained, for movement of the chest wall intensifies the agony; and the heart is either slowed or beats irregularly. The patient attempts to assume a position that will relax the muscles of the thorax and arm, and may either take a sitting or standing posture, being careful, however, to secure support.

Patients are not talkative during a paroxysm, every inspiration required in the act of conversation

[1] Read at the forty-fourth annual meeting of the Æsculapius Society of the Wabash Valley, held at Paris, Ill., October, 1890. Dr. Bixby was for many years a victim of organic heart-disease and a sufferer from frequent attacks of angina pectoris. He died October 31, 1891.

being accompanied by an acute pang. All movements or jars increase suffering and there is often a strange sensation as of approaching death.

These symptoms, though passing rapidly, sometimes not lasting more than a few moments, may be likened to the slow and easy motion of a train of cars as it leaves a station, but at each second adding to its momentum and intensity, until it is rushing along at reckless speed, pounding, racking, and tearing along, until the patient dreads the next move and fears instant destruction—then, by the same imperceptible change there is a gliding, easy slackening of signs and soon the countenance itself clears a little, and with a sigh of relief he feels well. Such is the course of symptoms in a well-developed paroxysm. The symptoms may vary; the arm may not suffer; the paroxysm may be so mild as as to be almost disregarded.

What is it? For years that question has been asked, and as yet it is practically unanswered. The diversity of opinion as to the nature of the affection is illustrated by the number of names that have been given it, twenty-four in all, based upon phenomena that seemed to be characteristic. The common name, angina pectoris, is as unmeaning as any.

From a clinical standpoint there seems but little if any advantage in considering the affection under the two forms, true angina pectoris (in which there is disease of the heart) and false angina (in which there is no recognized heart-lesion). I might say that no clinical distinction can be determined; and the pathology of the disorder is at best uncertain. It is true that in some cases in which death has occurred, in one, ossified or obliterated coronary arteries have been found; in another, fatty degeneration of the heart; and in another, some other morbid condition; but similar lesions are found in cases in which there had never been attacks of angina. The affection has been considered as a neuralgia, but pure and simple neuralgia it cannot be; for while neuralgia is strictly a nerve-pain (and pain enough there is in angina), the pain is so different from the indescribable, agonizing sensations of angina pectoris that the latter must be looked upon as a neurosis; and here we have a clear, decided statement that we are lost. So we accept the neuroses as the category into which angina pectoris falls, and qualify it further by the prefix vasomotor. Some writers prefer to call the disorder angina pectoris when there is recognized organic heart-disease, but under all other circumstances to call it simply a neurosis. This seems like a distinction without a difference, for with or without heart-trouble the affection is a neurosis, the heart-trouble having no clinical significance.

The pallid skin, indicative of disturbed circulation, the slowed or irregular heart's action, accompanied by pain in the thoracic respiratory muscles, seem to point more surely to a centrally impeded or deranged innervation affecting the capillaries than to organic heart-disease. With this conception we can understand why the symptomatic phenomena may be irregularly produced, one part affected and another not, accordingly as a greater or smaller number of vasomotor nerve-centers is disturbed. We also find that angina pectoris may result from organic or functional irritation of the terminal filaments of the pneumogastric nerve supplying the heart, lungs, liver, stomach, or intestines, the sense-impressions being conveyed to its nucleus in the medulla and communicated to the vasomotor nuclei. The vasomotor centers being distributed throughout the cord, as well as in the medulla, are irritated, whether from nutritive defect or otherwise, the direct cause being conjectural; the capillaries of those parts or organs from which the disturbance emanates are contracted; the blood-pressure is increased and the circulation is diminished, as indicated by the visible signs. The disturbance of circulation cries for relief, and the excruciating pain becomes a landmark for the location of the organs involved, and furnishes indications for treatment during the paroxysm, as well as in the intervals between paroxysms.

The means at hand for treating the spasm can now be plainly indicated: Ether, chloroform, morphine hypodermatically, and amyl nitrite. Of these, morphine and the nitrite are preëminently the best. Of the latter, from two to five drops may be given by inhalation. Amyl nitrite is rapid in action, stimulating the vaso-dilator centers and causing a flush to appear. With the reëstablishment of the capillary equilibrium, the symptoms of the paroxysm subside. It must, however, be remembered, that the nitrite affects the entire vaso-dilator system (especially that controlling the head), and by increasing the circulation in other parts, arm and extremities, sometimes causes a disagreeable sensation of fulness. It is therefore a remedy that must be used with circumspection. If confided to the patient, only a few doses should be prescribed and these with written cautions.

Many of the attacks are so short that the paroxysm may pass before medicinal treatment can be employed. As the spasms are, sooner or later, likely to recur, the case should be under persistent and prolonged treatment during the interval. Should the attack be concurrent with cardiac lesions these should receive due attention and be treated as they would under other conditions; nevertheless a general course of nerve-tonics and such other judicious medication as may be called for will prove satisfactory both to patient and practitioner. It is especially in the form designated false angina that we

may hope for some permanent good from treatment. This condition is mostly found in those of neurotic tendencies, of rapid growth, poorly nourished, or suffering from gastralgia, enteralgia, indigestion, hyperemia and torpidity of the liver. Let us not ignore these cases, but remember that the nerve is simply the means by which the existence of peripheral disorder is communicated to the central organ —the brain.

For the treatment during the interval, arsenic holds a position to the general condition similar to that of amyl nitrite during the paroxysm. For all neuroses, in fact whenever a nerve-tonic is called for, arsenic is a remarkable remedy; but as in the case of the nitrite, it must be used discriminatingly. In some unknown way, arsenic greatly assists the nutritive processes. According to circumstances, iron, nux vomica and the phosphates, given alternately or with arsenic, may be found necessary.

ORIGINAL LECTURE.

AMPUTATION AT THE HIP-JOINT BY WYETH'S METHOD.

A Clinical Lecture delivered at the Jefferson Medical College Hospital, February 3, 1892.

By W. W. KEEN, M.D.,
PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

Gentlemen: The operation that I have to do before you to-day is a very rare one. The surgical members of the Faculty of this College have performed only five operations of this kind, but these five have been remarkable in one respect. The late Professor Joseph Pancoast did two amputations at the hip-joint; the first one was done at the Pennsylvania Hospital in the earlier part of 1860—just before I began the study of medicine —and in this case, for the first time, he adopted the method of preventing hemorrhage by an abdominal or aortic tourniquet; the case recovered. His second case was done in 1865, in the old College building, and also recovered. The late Professor Samuel D. Gross first operated in 1862, at the Philadelphia Hospital — an operation that I had the pleasure of seeing; his second was performed in 1865, and his third, in this amphitheater, in 1879; all three recovered. You observe, therefore, the remarkable fact that my surgical predecessors have done five amputations at the hip-joint with five recoveries. It must be remembered, also, that these operations were in the pre-antiseptic days, and that the mortality of hip-joint amputation varies from 40 to 93 per cent. It is, I hope, a happy augury for the result in this case. Let me now give you the history of the patient:

Mrs. T., thirty years of age; residence, Bahia, Brazil; entered the Jefferson Hospital January 19, 1892. She was born in Texas, the family history being good. A brother was never very rugged, but has no organic trouble. At nine years of age the patient had her right arm fractured above the elbow, with injury of the musculo-spiral nerve; this produced wrist-drop that has never passed away, and the muscles of the arm are wasted. She had whooping-cough at thirteen, which left her with a bad cough for five or six years. Her greatest weight was 106 pounds, and she now weighs 101 pounds. Her height is five feet two inches. She married at twenty, and immediately went to Brazil as a missionary, since which time she has never been very strong. She has had three living children, and one miscarriage at three months. Two years ago she had a severe attack of smallpox, and, while recovering, an abscess formed at the seat of the old fracture of the arm.

Her present trouble commenced about seventeen months ago. At that time, while pregnant with her last child, both legs swelled, the left much more than the right. A great deal of pain accompanied the swelling. The pain and swelling diminished after the birth of her child, but there remained a lump in the left popliteal space. In May, 1891, this began to be very painful, the pain being sharp and shooting in character. Soon after this the tumor also began to increase in size until it now extends from the top of the calf nearly to the groin. In

Brazil she consulted both native and English physicians, and they decided that amputation at the hip-joint was the only possible means of relief, and advised her to come to the United States to have it done. Her health has improved on the voyage from Brazil. She arrived in this country only a few days ago. A slight systolic cardiac murmur is heard over the base of the heart. The tumor measures twelve and five-tenths inches in length, and the circumference of the lower part of the thigh is twenty-three inches. The lymphatics in the groin are not enlarged. The pains are now dull in character and not as severe as they have been. Her digestion is good. She is, unfortunately, five months pregnant.

Having now given you the history of her case, so soon as the patient is brought in you will observe that the tumor extends well up toward the hip, but that there is still room for a flap between the tumor and the joint. You would naturally, therefore, ask me, Why not spare her the more severe operation of amputation at the hip-joint itself and amputate at the junction of the upper and middle thirds of the thigh? My answer is this: The tumor is undoubtedly a sarcoma. I fear that it has

originated from the bone or its periosteum—an osteo-sarcoma—and if so, the probabilities are that the entire bone is infected, and, therefore, to leave the upper portion of it would be, in all probability, to leave a source of infection from which the disease would start anew and destroy her life. Even if the bone is not involved, the soft parts are infiltrated so high up that there is not room for flaps of undoubtedly healthy tissue for a thigh amputation; hence the operation must be at the hip-joint or not at all. I am very loth to do any operation at all, the danger is so great. In addition to that, in this special case her present pregnancy creates so large an additional percentage of danger that I would gladly do no operation.

The question will then naturally suggest itself to you, Why not wait until after her confinement? or, Why not induce premature labor? As to the first: It would be necessary to wait four months for the completion of her normal term of pregnancy and at least one month for the puerperal period to pass. These five months might be cut down to four, possibly, by inducing premature labor at the eighth month; but not only do we not know what her condition might be after labor, whether premature or at term, but the disease, in all probability, in from four to five months from now would be so far advanced that I should then decline to do any operation. To induce labor now and to wait for a month to pass would be a possibility; but, inasmuch as we are not at all certain that she will abort after the amputation, I think we are justified in trying to save the lives of both mother and child; moreover, this is her own strong desire. Abortion will depend chiefly upon whether the operation can be made aseptic. If sepsis follows, abortion will almost surely occur; but if the wound runs an aseptic course, I think we shall probably avoid this calamity.

The *reasons* for amputation at the hip are twofold: First, traumatism; secondly, some new-growth—especially osteo-sarcoma. Occasionally other causes exist, but practically the traumatism and these pathologic causes cover more than nine-tenths of the cases. The *dangers* of the operation are threefold: First, and foremost, hemorrhage; secondly, shock; and thirdly, the later danger of sepsis, with all its complications. These are especially prone to follow operation at the hip-joint, on account of the lowered vitality of the system after operation, the enormous surface that is exposed, and the difficulty of preventing infection from the urine and feces.

I. The means by which *hemorrhage* is met are varied. First, the older methods of ligating the superficial and deep femoral arteries and veins prior to amputation; or compression of the abdominal aorta, which, as I have told you, was first devised and done by my predecessor, Professor Joseph Pancoast. Both of these, however, have great disadvantages. Ligation of the femoral vessels obviates hemorrhage from these vessels in the anterior flap, but it does not at all control hemorrhage from the gluteal, the sciatic, the obturator, and the circumflex and numerous muscular branches in the posterior flap. Compression of the aorta exposes the patient to dangerous pressure on the solar plexus or on the viscera, and, in addition, in our present case, is absolutely ruled out by her pregnancy.

Secondly, a few years ago Dr. Frank Woodbury,[1] a graduate of this school, proposed to insert the hand into the rectum and compress the common iliac artery. Soon afterward Van Buren, of New York, repeated the proposition. This, I believe, has never been done; but it possibly suggested a mechanical means which has answered a good purpose in several cases—Davies's lever. This English surgeon, following out the same idea, proposed to use a long, well-rounded, and smooth ebony stick, which might be compared to a couple of feet of broomstick. This was inserted in the rectum, and by lifting the handle, the other end being over the common iliac artery, this vessel could be compressed. Injury to the rectum, however, and the want of absolute reliability have caused this method to be viewed with only moderate favor.

Thirdly, the Furneaux-Jordan method. A compress is laid over the external iliac artery just above Poupart's ligament, and a band of elastic tubing is passed between the thighs, carried inside the tuberosity of the ischium below and within the crest of the ilium above. When the tubing is drawn sufficiently tight it arrests the pulsation in the external iliac artery by its pressure. I have tested this method repeatedly on the living model, and I confess that it has not given me any satisfaction; I have had great difficulty in controlling the artery.

Fourthly, Trendelenburg proposed to pass a stout pin under the femoral vessels and compress them by an elastic tube wound around the two extremities of the pin in a figure-of-eight.

You will notice that all these methods were open to one of two objections: if they arrested the blood both in the anterior and posterior parts of the thigh, they were objectionable on mechanical grounds by reason of the possible injury to the solar plexus, the intestines, or the rectum; or if they compressed the vessels in the anterior flap alone (the external iliac or the femoral), they were objectionable because of the great hemorrhage from the posterior flap. It was reserved for an American surgeon—a gentleman who has done me the honor to come from New York and be present at the operation to-day—Professor John A. Wyeth, to devise what is undoubtedly the best method, and, in fact, what I think we may call now the only method of hemostasis in amputation at the hip-joint. In addition to these methods of preventing hemorrhage, Erskine Mason proposed that, as far as possible, we should save the blood that is in the leg by Esmarch's bandage. In some cases the entire limb can be Esmarched from the toe to the groin, but in our present case it will not do to apply the Esmarch bandage higher than the lower border of the tumor, otherwise some of the sarcomatous elements might be driven into the circulation. Wyeth's operation is done as follows:

Two stout pins, twelve inches long and one-quarter of an inch in diameter at the head, are passed through the upper part of the thigh. The object of these pins is to hold in place a piece of elastic tubing which is wound tightly around the thigh just above them; the tubing will constrict all the bloodvessels in the entire thigh, and is prevented from slipping down by means of the pins.

[1] The American Journal of the Medical Sciences, January, 1874, p. 131.

The exact place of the pins is not very important, but they must be passed through the tissues at points where they will not injure any large vessels or nerves. The first one is passed about one and one-half inches below the anterior superior spine and slightly to its inner side and emerges just back of the trochanter major. The second one is passed an inch below the spine of the pubes internally to the saphenous opening and emerges just in front of the tuberosity of the ischium. Elastic tubing, half an inch in diameter, is then wound five or six times around the thigh, and is secured by stout forceps, or, better, by tying it. This tubing should not be ordinary white-rubber tubing, which is not very elastic, but should be of pure rubber. The control of the hemorrhage by this method, as you will see, must be absolute. Do not make one mistake: when I make the circular amputation you will see a large amount of blood flow out, but this will be wholly from the leg and not from the trunk; so soon as this has escaped the hemorrhage will entirely cease. About five inches below Poupart's ligament a circular incision is made through the skin and the superficial fascia; this is then dissected back, as a cuff, until the level of the lesser trochanter is reached; the muscles are then divided circularly down to the bone, and the bone is sawn off. Dr. Wyeth has made the happy suggestion that, when the bone is bare, instead of dividing it at the same level as the muscles, the tissue be stripped down for several inches and the bone sawn much lower down; the protruding part of the bone then serves as a handle for manipulation. This is far superior to sawing the bone at the lesser trochanter and seizing the stump of the bone with the lion-jawed or other forceps.

The next step is to secure the bloodvessels. The principal ones will be the superficial and deep femoral arteries and veins, in front, just under the deep fascia. Posterior to the bone, along with the sciatic nerve, run the sciatic vessels; externally, toward the gluteal region, the gluteal vessels, and lower down, the circumflex. Internally, at about the middle or a little posteriorly, lies the obturator. Besides these there is a large number of muscular branches which cannot be found until the elastic tubing is gradually loosened, after the important vessels have been secured. The vessels being all tied, even down to the smallest spouting branches in the muscular tissue, the elastic tubing, which has been partially released, is now removed and the pins drawn out. The upper portion of the femur is then dissected loose from the soft parts, hugging the bone as closely as possible, so as to avoid dividing any large vessels. The muscles are then cut loose from the trochanters, and the capsule of the hip-joint is exposed and opened. The ligamentum teres is now severed and the entire upper extremities of the bone removed.

II. The second danger, as I have mentioned, is *shock*. This is met in several ways. First, our patient has had an ounce of brandy and one-twentieth of a grain of strychnine. Secondly, I shall operate, as you observe, with the patient in a Trendelenburg chair; by means of this I can at any moment not only keep the patient horizontal, but, if I choose, I can put the head lower than the hips at the touch of a spring. Thirdly, in any serious operation the chilling of the patient from the necessary exposure of the person becomes a matter of great moment; especially is this true in an amputation so high up as the hip-joint. Accordingly, I have had both of my patient's arms, the right leg, and the entire body well wrapped in a thick layer of raw cotton kept in place by bandages. This is particularly necessary in using Trendelenburg's chair, which is narrow and cannot accommodate any hot-water bottles or other means of artificial heat. Fourthly, I have digitalis, the galvanic battery, and hot enemata all ready for use should they be required. In spite of all these, however, the shock must be severe. One cannot remove nearly one-fifth of the entire body without it.

III. The third danger is *sepsis*. I can dismiss this in a very few words. The leg, the buttock, and the abdomen have all been prepared as is usual in all my operations. This has been done for two days in succession, in order to obtain absolute asepsis. Secondly, the bowels have been opened gently and the rectum washed by an enema of warm water. Thirdly, the vagina has been disinfected by a douche of bichloride of mercury (1 : 2000), followed by hot water, and, to avoid a sudden possible opening of the bowels or any vaginal infection, an antiseptic towel has been secured over the vulva.

The patient is now on the chair; an aseptic sheet is under her, another one over her body, and a third envelops the right leg, which will be held by one of the clinical assistants. The steps of the operation are followed precisely as I have given them to you.

The operation being completed, let me say a few words in reference to it. The wrapping of the person of the patient in cotton is, I think, a matter of a great deal of importance in preserving the body-heat. It is very evident that she has not suffered nearly so much from shock as she otherwise would have done. I have operated as quickly as I could consistently with thoroughness. No operation must be done so quickly that it is done badly; but if done well, the more quickly it is done the better. You have seen, however, that the operation has taken fifty minutes. Two steps caused delay: first, the separation of the soft parts from the bone, and secondly, the ligation of the numerous vessels. In any other case I should not separate the soft parts, as I did here, by a knife. I should prefer the scissors, which, to a certain extent, would crush the small vessels; or, still better, I should be disposed to strip up the periosteum, in order to avoid the numerous small vessels which have taken so much time both in finding and ligating. Of course, at the linea aspera the tissues must be divided by the knife or scissors. One vessel, you especially noticed, was troublesome. It lay just outside the capsule in a wound of great depth, and was difficult to find and seize separately from the capsule. Should I ever have occasion to amputate at the hip again I should undoubtedly prefer to slit up the soft parts on the inside if need be, or if dividing the muscular tissues about the great trochanter gave trouble, to slit them at the outside—these additional incisions practically counting for nothing in healing and for much in facility of dealing with hemorrhage or with the muscles.

I cannot express too high an opinion of Dr. Wyeth's method of primary hemostasis. Not one drop of blood was lost from the trunk until after the large vessels were secured. On relaxing the compression of the tubing, of course, a large number of vessels required ligation, and

then after removal of the bone quite a number more, so that thirty-three ligatures in all were required. This large number was probably due to the great vascularity of the thigh, as the tumor required a large amount of blood for its growth. I think it probable that the patient lost about from eight to ten ounces of blood during the later securing of the vessels and enucleation of the bone. Dr. Wyeth's idea of a low amputation of the bone is a very happy one, the bony handle being very satisfactory. Whether the stripping up of the periosteum from the bone in order to separate the soft parts with less hemorrhage would be a source of danger has occurred to me. I shall ask my assistant, Dr. Coplin, to examine the periosteum of the upper part of this bone in order to determine whether there is any sarcomatous infiltration. If there is, it precludes at once the propriety of stripping up the periosteum.

If there is no sign of any such infiltration, the stripping up of the periosteum would not only avoid the danger by diminishing the hemorrhage, but would also have the possible advantage that in this partially complete periosteal tube there may be developed a more or less tough and resisting substitute for bone, which may make the wearing of an artificial limb less irksome. In most hip-joint amputations, an artificial leg can be worn only for a few hours each day, the rest of the time patient going about on crutches.

Two drainage-tubes have been placed in the wound, you notice, at both the external and internal extremities of it, both reaching up to the acetabulum. In a wound of such enormous surface and so very deep as this, drainage is essential, but the tubes may be removed at the end of two or three days, so that no sinus will remain and no avenue of deep infection exist.

The mortality of amputation at the hip-joint is very great. It is, perhaps, the gravest operation in all surgery. You will find in the *International Encyclopedia of Surgery* (i, 684) a table, prepared by a former assistant of mine, Dr. F. C. Sheppard, which contains the largest number of cases ever gathered together, 633 in number. Let me give you simply three summaries: First, in military surgery there were 238 cases of hip-joint amputations, with an average mortality of 87 per cent. Among these, primary and intermediate operations give the frightful mortality of 93 per cent.—only 7 out of 100 recovered! Amputation at the hip, therefore, during a campaign is almost equivalent to a death-warrant.

Secondly, in civil practice, after traumatism, including gunshot wounds, there were 71 cases, but the death-rate fell at once to 66 per cent. by reason of the better care and earlier attention and the absence of the hardships and privations inevitable during war.

Thirdly, and more encouragingly, there were 276 cases of amputation for pathologic causes, with an average mortality of 40 per cent. At best you see, therefore, our patient has to face a terrible risk, and, in view of her pregnancy, an exceptionally large risk.

March 10, 1892. The night after the operation, for about forty-eight hours, the patient suffered from traumatic delirium, although her temperature only rose to 100.8°. With this delirium she entirely lost control of the bladder. The greatest care was taken to prevent, if possible, infection of the wound by the urine. The inner drainage-tube was removed on the second day. No general infection took place, but by the end of the third day some pus showed itself in the track of the inner drainage-tube and infected the outer one soon afterward. The outer one was retained for several days —first, on account of a very abundant serous oozing, and later on account of the local suppuration. There was not, however, any general infection, and the temperature never rose to 100° after the first twenty-four hours. The flaps united excellently, except in the track of the drainage-tubes.

At no time was there the least indication of any disturbance of her pregnancy. This I attribute to the absence of general septic infection; had it taken place I have no doubt that abortion would have followed the high fever and general constitutional disturbance that would have attended it.

For the first forty-eight hours especially, the pain was very severe in the amputated leg, particularly in the foot-sole, and morphine in small doses was required to relieve it. The phantom leg was raised from the bed and held suspended in the air. Removal of the sutures seemed to increase its apparent reality, and up to the present time (March, 1892) the leg remains still as vivid as before. The position of the leg at present varies somewhat with the position of the stump. It is always, however, to some extent in advance of the stump—*e.g.*, when she is lying upon the bed it is a little above the bed. Usually the knee is bent, and the knee itself has been rather vividly perceived. Within the last week or ten days the leg has begun to shorten—not that the foot is attached, for instance, to the middle of the calf, but the entire leg seems to be shortening in its length. The pain is still felt occasionally in the foot-sole and sometimes shoots up from the lost foot to the stump.

Should I have occasion to repeat the operation, I should certainly use but one drain, placing that externally to avoid the possibility of infection.

MEDICAL PROGRESS.

Successful Operation for Cerebral Abscess.—MURRAY (*British Medical Journal*, No. 1624, p. 333) has reported the case of a girl, five years old, who, fourteen days after having been struck by a poker upon the right side of the head, presented uncontrollable twitching of the left arm and left side of the face. The movements continued for half an hour without loss of consciousness. Two other like attacks occurred on the same day and another subsequently. The seizures began with shaking of the left arm, followed by movements of the fingers; then the left side of the face became involved and the eyes rolled about. Progressive loss of power in the left hand was observed after the first attack. The hand became extended at the metacarpo-phalangeal joints and flexed at the interphalangeal joints. Sensation was unimpaired. The temperature was 98°. A small, sloughing scalp-wound was found in the right parietal region, in a situation corresponding with the junction of the upper and middle thirds of the fissure of Rolando. Through this wound a probe could be passed into the cranial cavity. Operation having been decided upon, a three-quarters inch disc of bone was removed at the site

of the wound. The dura mater was found to be torn; the cerebral structure was soft and sloughing and without pulsation. A probe introduced entered an abscess-cavity from which a dram of viscid pus was evacuated. The cavity was irrigated with a 1 : 5000 mercuric chloride solution; a small piece of sloughing tissue was removed, and a drainage-tube was introduced. Pulsation became evident at the end of a week. At the end of two weeks the drainage-tube had by gradations been entirely removed. The seizures did not recur. Power returned to the left arm and hand. Bilateral optic neuritis was discovered, but this subsequently disappeared.

The Non-contagiousness of Leprosy.—In a communication to the *New York Medical Record*, No. 1113, p. 276, Dr. L. Duncan Bulkley presented the following conclusions concerning leprosy, based upon considerable observation:

1. There is no warrant for the popular terror surrounding the name of "leprosy" as a disease.

2. The disease is not contagious in the ordinary acceptance of the term, as applied to such diseases as smallpox, scarlatina, or syphilis.

3. Leprosy is probably due to the presence of a bacillus.

4. There is strong reason to suspect that it may first be introduced into the system by the way of food, and fish is the most likely of all substances to furnish and convey the poison.

5. There is evidence that when acquired, the disease may, under favorable conditions, be transferred from one person to another.

6. Heredity probably accounts for a share of the cases, but the disease is not necessarily transmitted by inheritance.

7. Inoculation with leprous matter may be the means of conveying the disease, when all the conditions are favorable.

8. There are far more and greater reasons for the restriction of syphilis and tuberculosis by isolation and segregation than for the necessity of these regulations in regard to leprosy.

Poisoning by Balsam of Peru.—Lohaus (*Berliner klin. Wochenschr.*, No. 6, 1892, p. 130) has recorded the case of an infant, six days old, to see which he was called on account of convulsions. He found the child covered with sweat, crying, and evidently in great distress. On inquiry, it was learned that the infant was nursed by its mother, but that the stools were not normal. They were thin, greenish, and contained mucus. The child was restless and refused to take the breast. On the following day it was quieter, but moaned. The skin was wet; the lips were cyanotic; from the mouth exuded brownish, viscid mucus, with a peculiar ethereal odor. The pulse was rapid and feeble; the pupils were small. On investigation, it was elicited that the mother had been making applications of balsam of Peru to the nipples to prevent the development of fissures, simply wiping the nipples prior to nursing. In consequence, the infant got a small quantity of balsam of Peru at each nursing. As it became restless, the frequency of application to the breast was increased. The symptoms grew progressively worse, and the child died. An autopsy was not permitted, but it is believed that the balsam taken with the nourishment gave rise at least to an intense gastro-intestinal catarrh.

Linear Craniotomy.—At a meeting of the French Academy of Medicine, Prengrueber (*Münchener medicin. Wochenschr.*, No. 5, 1892, p. 80) reported the successful performance of linear craniotomy in a case of simple idiocy in a boy nine years old, without morbid hereditary predisposition, in whom development was retarded after the eighteenth month of age, the child learning to walk only at three, being filthy, and unable to read or write, and behaving like one of three or four. The cranium, elongated vertically, presented an elevation in the course of the fronto-parietal suture. The frontal and parietal fossæ were entirely obliterated. The cranium was asymmetrical, the left side being less well developed than the right. A strip of bone, a little more than an inch wide and about four inches long, was removed from the left side of the cranium about an inch from, and parallel with, the sagittal suture. Corresponding to the elevation at the fronto-parietal suture a thickening of the bone, directed inward, was found exerting pressure upon the brain. The offending structure was removed. The primary result was most satisfactory. Too little time had elapsed to warrant any opinion as to the ultimate result.

Attenuation of Tubercle-bacilli.—Failing in attempts to inoculate hens with tubercle-bacilli obtained from man, Gramatschikoff (*Centralbl. f. allgem. Pathol. u. patholog. Anat.*, 1892, ii, No. 25, p. 1057) sought to determine the nature of the changes that took place in the bacilli when introduced into the organism of hens. With this end in view, he introduced into the peritoneal cavities of hens pure cultures of tubercle-bacilli contained in parchment paper, in animal membranes, or in glass tubes closed by permeable membranes. The paper, membranes, or tubes, were removed after variable intervals, and the contained bacilli cultivated upon glycerin-agar and introduced into the eyes of rabbits. By this means it was possible to obtain tubercle-bacilli, of which the virulence was attenuated in a degree corresponding to their length of residence in the organism of the hen. Some were still capable of inducing a general tuberculosis, but the process pursued a slower course than usual. In others, only a local lesion developed, and this underwent spontaneous cure.

Gunshot Injuries of the Spinal Cord.—Vincent (*Revue de Chirurgie*, No. 2, 1892, p. 89) has recorded three cases of gunshot wound of the spinal cord treated by trephining, of which two terminated fatally. From a study of these and of thirty other cases collected from various sources, he expresses the view that while such injuries are unquestionably grave, they are not necessarily fatal. There is evidence that in some cases surgical intervention has contributed to the successful issue. If the lesion involve the spinal column on its posterior or lateral aspects, in an accessible situation, and there be no visceral lesion, abdominal or thoracic, imperilling life, the wound should be exposed throughout its extent, to determine the character of the injury, to remove foreign matters capable of causing compression or irritation of the cord, and if necessary to trephine the

spinal column. In some cases the operation may prove futile, but aseptically performed it is innocuous.

Cystoscopy.—From a consideration of the subject of cystoscopy, MEYER (*N. Y. Medical Journal*, No. 689, p. 174) concludes that the procedure should be practised in all obscure conditions of the bladder or kidneys, before operative interference is resorted to. Certain conditions render cystoscopy impracticable. The manipulation is simple and harmless, though its successful execution requires experience. It should be employed after all other means of diagnosis have been exhausted. It seems probable that in the future it will be possible to catheterize the ureters, so that the urine of each kidney may be separately examined. By observation the relative work done by either kidney may be approximately determined. The operating cystoscope may afford the means of therapeutic application under direct observation.

Transmission of Tuberculosis by the Seminal Fluid.—At a meeting of the Society of Anatomy and Physiology of Bordeaux, SOLLES (*Journal de Médecine de Bordeaux*, 1892, No. 5, p. 52) reported the results of experimental inoculation of two guinea-pigs, the one with the fluid expressed from the testicle of a tuberculous subject, and the other with the spermatic fluid obtained from the seminal vesicle of another tuberculous subject. In the first, the induration at the site of inoculation slowly disappeared, without involvement of adjacent glands, and the animal recovered. In the case of the second guinea-pig, fatal general tuberculosis developed. The evidence, in so far as furnished by a single case, points to the hereditary transmissibility of tuberculosis.

The Transmissibility of Carcinoma.—At a meeting of the Académie des Sciences, DUPLAY and CAZIN (*La Médecine Moderne*, 1892, No. 8, p. 113) reported the results of investigations as to the inoculability of carcinoma. In a first series, comprising twenty-two observations, they inoculated, either subcutaneously into the peritoneum or into the blood, rabbits, guinea-pigs, and dogs, with carcinomatous material obtained from man, in all instances without positive results. In a second series of experiments they inoculated animals with carcinomatous material obtained from dogs, but without producing more than a local inflammatory lesion, which underwent absorption. Attempts to transmit carcinoma from dog to dog also failed.

A Case of Myxedema of Syphilitic Origin.—At a meeting of the Association of Surgeons of Berlin, KÖHLER (*Deutsche medicin. Wochenschr.*, 1892, No. 6, p. 122) reported a case of myxedema in a woman fifty years of age, who likewise presented manifestations of syphilis. Anti-syphilitic treatment was followed by the disappearance of the specific symptoms, as well as of the myxedema. An explanation is sought in a possible syphilitic involvement of the thyroid gland.

Toxicity of the Serum of the Blood in Puerperal Eclampsia.—In two cases of puerperal eclampsia CHAMBRELENT (*La Semaine Méd.*, 1892, No. 12, p. 89) found that the toxicity of the serum of the blood was increased, while the urotoxic coëfficient was diminished. These observations are confirmatory of the view that puerperal eclampsia is dependent upon auto-intoxication.

THERAPEUTIC NOTES.

The Treatment of Cystitis with Mercuric Chloride.—GUYON (*Annal. des Mal. Génito-urinaires*, xi) recommends mercuric chloride in the treatment of cystitis. The results are especially good if the cystitis be tuberculous. Irrigation or instillation may be employed. The mercurial solution may vary from 1 : 5000 to 1 : 1000. At first from twenty to thirty drops are instilled, by means of a syringe, into the prostatic urethra, the quantity being gradually increased to a dram. The bladder must be evacuated after each instillation. In gonorrheal cystitis, good results were obtained from instillations of silver nitrate 1 or 5 : 100.—*Münchener med. Wochenschr.*, 1892, No. 5, p. 81.

Ointment for Sycosis.—

℞.—Acid. tannic. . . . . gr. xxiv.
Sodii lactat. . . . . ʒj.
Zinci oxidi } . . āā ʒiij.
Amyli }
Vaselini . . . . . ℥j.—M.
Ft. unguent.
S.—Apply twice daily to the skin carefully shaved.
ROSENTHAL, *L'Union Méd.*

Injections of Gray Cerebral Matter in the Treatment of Neurasthenia.—At a meeting of the French Academy of Medicine, PAUL (*L'Abeille Méd.*, 1892, No. 9, p. 65) reported the utility of subcutaneous injections of sterilized emulsions of the gray matter of the brain of the sheep in the treatment of neurasthenic conditions. In eleven cases in which the procedure was employed good results were obtained; the remedy was well borne; the injections occasioned no unpleasant complications.

For Coccydynia.—The following suppository employed at bedtime will afford relief from the pain of coccydynia and permit sleep:

℞.—Ext. belladonnæ . . . gr. ¼.
Ext. hyoscyami . . . gr. ¾.
Iodoformi . . . . gr. ¾.
Ol. theobromæ . . . gr. xx.—M.
WHITLA.

For the Cough of Acute Bronchitis.—

℞.—Apomorphinæ hydrochlorat. . gr. j.
Acid. hydrochloric. dil. . . ♏x.
Syrup. . . . . fʒiv.
Aquæ menth. pip. . . . fʒjss.—M.
S.—From one-half to one teaspoonful every two hours.
WHITAKER.

For Acute Angina.—

℞.—Sodium benzoate . . . gr. x.
Tincture of benzoin . . fʒss.
Infusion of rose leaves . . fʒj.—M.
S.—Use frequently as a gargle.
L'Abeille Méd. [*Cour. Med.*]

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SATURDAY, MARCH 26, 1892.

THE ETHICS OF PROPRIETARY PREPARATIONS.

THE subject of this article is suggested by a letter from a correspondent written in answer to our own letter declining to publish an article that seemed to us liable to be misunderstood as an advertisement of a certain proprietary preparation. We do not question our correspondent's good faith; but in the belief that he has been misled, and with a desire to save others from being misled as he has been, we we shall try to speak plainly on the important issues involved.

For the sake of designating in our argument, without advertising it, a preparation such as our correspondent advocates, we will substitute the word *fraudine* for the name used by our correspondent.

Our correspondent says:

"There is a difference between patent medicines sold to the public, proprietary articles sold to anyone, and antipyrin, aristol, *fraudine*, and similar drugs introduced only to the medical profession, where we are made acquainted with the general character of them, as, for instance, *fraudine* being a coal-tar derivative, and where its discovery is due to the industry of some chemist outside of the medical profession. We surely are but at the beginning of this labor of chemistry, and the only stimulation chemists will have for such tedious work will be the pecuniary reward resulting not from the fact of the preparation being a secret—that makes one of the points of difference, for anyone can go to the Patent Office and learn the procedure—but from others being prevented from manufacturing the article for a number of years."

There is, we regret to note, considerable confusion and wavering in the minds of many members of the medical profession as to the attitude that should be assumed toward preparations of the classes named by our correspondent. "Medical ethics" rest upon no other foundation than that of ethics in general—the simple principle that there is a distinction between right and wrong. The acts prohibited in the written code adopted by the American Medical Association are not wrong because the code says they shall not be done; but the code says they shall not be done because they are wrong. They were reprehensible before the code was established, and to abolish the written prohibition will not make them commendable. Every honorable man whose state of civilization has advanced far enough to enable him to appreciate the distinctions on which their prohibition was based must, perforce, continue to avoid them.

If we are told that distinctions between right and wrong are hard to draw, we answer that religions, philosophies, and science have, in various language, expressed at least one simple and fundamental guide: That which is selfish is wrong. The good of all, not of one, is to be sought. Despotism in government, monopoly in economics, secrecy in medicine, are children of the same vice.

The physician occupies a unique relation to the public and to his patients. He is trusted with more than their fortunes—with their lives. He must think of their welfare before his own, or rather, find his own welfare in theirs. If he is not prepared to do this, he must not enter the sacred ministry of Hygeia. The thought of gain that might legitimately be entertained by those who labor in any other calling, save alone that of the minister of religion, may not enter the physician's mind. True, "the laborer is worthy of his hire," and the physician, like the pastor, must live; and to live, he must have the wherewithal to procure the necessaries of life; and to practise his profession usefully and intelligently, he must have books, instruments, and opportunities for study and research. All this requires money, and therefore, of course, the pastor must receive a salary, and the

physician is obliged to ask compensation for his services from those of his patients who are able to give such compensation. But from the element of profit-seeking that figures so largely in commerce and in some of the arts, the physician, like the pastor, must forever maintain himself purified.

In addition, he owes it as a duty to humanity to promptly make public for the benefit of all sufferers, present and future, any discovery he has made that may tend to throw light upon the causes or processes of disease, or to add to the resources of the profession and the public in preventing and combatting disease.

Furthermore, no useful discovery can be made by a physician at the present day unless he has in his possession knowledge that has come to him from the labors of others, unselfishly given throughout all the long ages of the history of the science and art of medicine. Having received this value from his predecessors and cotemporaries, he is bound to return an equivalent to his cotemporaries and successors. The knowledge he has been given came from the first, and the knowledge he can give belongs, of right, to the last.

From all these standpoints, therefore, the attempt to hold as secret or exclusive for the purpose of commercial profit, remedies or processes that the discoverer may deem to be more beneficial than those which are the common property of the profession, has always been regarded by the enlightened sentiment of medical men as nothing less than criminal. They cannot conceive that any true physician would be guilty of such a crime. Therefore it is that those who attempt to trade upon the alleged possession of secret processes of cure are regarded as charlatans and impostors. Therefore it is that no man may adopt the methods of charlatans and impostors and dream of retaining the respect or confidence of the profession whose holiest traditions he outrages.

What would the Church say to one who professed to have and to sell the secret of the soul's salvation?

Physicians dare not compromise with fraud; they must hold themselves free from the slightest suspicion of venality. "The greatest good to the greatest number" demands that they shall absolutely refrain from countenancing the secrecy that may envelop an alleged remedy, even by tacitly permitting its use. "To do a great right, do a little wrong"—even could great good follow, which in this instance would be impossible—is the argument of the special pleader, and of the devil. Much nobler is the sentiment, "If thine eye offend thee, pluck it out."

But even departing from the high ground of principle, and coming down to the very low level of expediency, let us consider whether or not it be expedient for the advancement of science and the promotion of the art of healing to use secret preparations or nostrums as remedies. By a secret preparation or nostrum we understand an alleged remedy, of which either the method of preparation or the true and exact composition is not made public. Quinine, for example, though perhaps prepared by a secret process, is not a nostrum. Neither does antipyrin nor acetanilide, nor thymol-iodide fall within this category. They are definite chemical compounds, and because the process by which one of them is made is in truth patented, it is on record. So-called "patent medicines" are not patented. They could not prove the "novelty" and "usefulness" that the law demands as a prerequisite to the issue of a patent. Their names are "trade-marked" or "copyrighted," but their composition is kept secret. To reveal it would be to reveal their fraudulent pretensions.

"Fraudine," *i. e.*, the drug referred to by our correspondent, concerning which all that is known is the bare assertion of its manufacturers that it is a "coal-tar derivative," is like the ordinary patent medicine in the absence of the necessary publicity involved in a true patent. It therefore falls within the prohibited category of nostrums or secret articles. The bald expression, a "coal-tar derivative," is therapeutically and pharmaceutically meaningless, and is as misleading as the ordinary quack's characterization of his nostrums as "purely vegetable." Strychnine and charcoal are both "purely vegetable," yet their therapeutic and toxic properties lie at the opposite poles of the pharmacologic sphere.

"Coal-tar derivatives" are many and various in composition, as in therapeutic properties and in toxic powers.

Kairin is "a coal-tar derivative," yet no careful physician will employ it in medicine, now that its toxicity has been so abundantly demonstrated. Suppose an enterprising firm of manufacturers, fortifying itself with certificates and reports (alas! so easily purchased), were to mix kairin with a number of inert substances, and put the mixture upon the market as an "American coal-tar deriva-

tive," having antipyretic and analgesic properties; would that justify the physician in prescribing it under the name of "antimorbine," when he would not be justified in prescribing it under its own name? How can he know that a preparation, concerning which neither the composition nor the process of manufacture is anywhere on record (and such is the case with *fraudine*), is not equally dangerous with the mixture we have supposed? As a matter of fact, at least one case of fatal poisoning by this very nostrum that our correspondent so extravagantly praises, is on record.

We have had in the so-called "gleditschine" a notable instance of what the unscrupulousness of manufacturers, presuming on the well-known gullibility of medical men, will lead them to do. Is it less reprehensible to mix acetanilide with sodium bicarbonate, and, while carefully refraining from making known the composition of the mixture, to allege it to be a new product with many wonderful virtues, than it was to mix cocaine and atropine, with the same careful secrecy and the same false allegations?

While, however, we deem it criminal for a physician to hold secret a medical discovery, and incompatible with the highest standard of professional conduct for him to patent a therapeutic invention, we do not and cannot object to a chemist's patenting anything that the laws of his country make patentable. We do not and cannot object to the chemist's entertaining the idea of profit, and laboring to attain large profit by honorable means. We do not and cannot object to the use by physicians of remedies of which the processes of manufacture are patented or secret, provided only that in every instance either the full process is of public record, or the true and exact composition of the finished product is made known. How else can one gain accurate knowledge of the effects of the medicines he administers? How else can he test the drug that is dispensed upon his prescriptions? How else can he be sure that the same thing is always furnished under the same name?

We would continue to use quinine, even if manufactured by a patented or by a secret process, because we have some means of learning whether or not the product offered us is what it purports to be.

So, too, antipyrin is subject to chemical analysis, or test, if not by physicians, at least by those competent to do such work, in the same manner as any of the drugs recognized by the Pharmacopeia is so subject. But the nostrum praised by our correspondent is not subject to such analysis, because those who prepare *fraudine* have nowhere informed analysts what it contains; and if they choose arbitrarily to alter its composition to-morrow, there is nothing to restrain them from so doing. There is no means even of ascertaining whether they aim to produce an invariable product; or, in the other event, of gauging the average variation, as we can do in the case of some of the variable preparations recognized by the Pharmacopeia.

Our correspondent cannot fail to see that we agree with every tenable point in his argument, but that as a whole his argument is like "the flowers that bloom in the spring"—it has "nothing to do with the case." Unless we are entirely misinformed—and our waste basket has been encumbered with much printed matter, a number of pocket-wallets, and some dozens of powders forwarded us by the Fraudine Company—the status of his pet nostrum differs from that of antipyrin and from that of thymol-iodide in vital points. Its composition is not known, its method of preparation is not recorded; it is not even patented, but like plain, non-professional, every-day quack preparations, is merely trade-marked.

For these reasons, we must decline to prostitute our reading-columns to its exploitation.

So much for the issues raised by our correspondent. The moral and legal questions involved in the practice of trade-marking and copyrighting the names of medicinal preparations, and a consideration of the attitude the profession should assume toward these questions, we defer for future discussion.

THE DISPOSAL OF TUBERCULOUS CATTLE.

THE appearance of tuberculosis in a herd of Jersey cattle, owned by a resident of Philadelphia, the method of diagnosis employed, and the measures taken to eradicate the disease, deserve more than passing notice, inasmuch as the whole subject bears an intimate relation to the public health. The herd was an exceptionally fine one; it was selected with the greatest judgment, and has been maintained under the best hygienic conditions. An ordinary physical examination would have failed to detect signs of disease. As a part of a plan to employ every measure available for determining the soundness of the cattle, it was resolved to subject them to a diagnostic test that has recently been the subject

of a good deal of heated discussion. Tuberculin was injected, and careful observations were made. Thirty per cent. of the herd reacted with a marked increase of temperature, which is considered as indicative of the existence of tuberculosis. In order to verify the correctness of the test, six cows were slaughtered, and of this number five presented macroscopic evidence of the existence of the disease in more or less decided degree; while in one animal there was some doubt, which will be set at rest by the results of a careful microscopic examination. If a critical examination of the pathologic specimens preserved for the purpose fully confirms the results already obtained (and of this there seems scarcely a doubt), the slaughter of the cattle will be continued until every suspected animal is destroyed.

Apart from the demonstration of the value of tuberculin as a diagnostic test, great importance attaches to the course of action taken in its relations to the public health. It is a well-known fact that a considerable percentage of cattle is more or less affected with tuberculosis. It is also well known that tuberculosis may be communicated to man by the consumption of the milk and flesh of cattle suffering from this disease. Tuberculosis is the great scourge of the human family, and therefore any plan that can measurably diminish the disease by abridging one of its sources should be adopted without delay.

The course to pursue, under the circumstances, is a plain one, but it must be orderly and systematically carried out, under legislative enactments. The Legislature has a clear and responsible duty to perform. The conservation of the public health is paramount to all other considerations. Let the Legislature authorize the rigid inspection of all cattle—not a happy-go-lucky examination, but one conducted by experts versed in the best methods of diagnosis. Let all cattle condemned be promptly slaughtered, and a periodic inspection be continued, with full authority to decide and to enforce its legitimate conclusions.

It is not expected, as in the present notable case, that the owners of the cattle shall suffer the loss. The public is to receive the benefit, and, therefore, the expense of eradicating the disease should be a public charge. By a just system of indemnification all objection to the arbitrary disposal of affected cattle will disappear. It will cost the State a large sum of money, but the benefit to be derived is immeasurably great, and far outweighs any money consideration.

NEWS.

TUBERCULOSIS IN CATTLE.

Tuberculin as a Diagnostic Agent.

THERE is no aspect of the subject of tuberculosis that is not important. There is probably none more important than the prophylaxis. As the disease is in no small degree transmitted by the milk and flesh of cattle, any means that facilitates its detection in and eradication from the source of food-supplies must command earnest attention. It is on account of the vital importance of the subject that we present herewith a detailed report of the proceedings in connection with the discovery of tuberculosis and the slaughter of some of the cattle of a herd of valuable animals, and the means taken to eradicate the disease. Not an insignificant feature of the investigation is the part played by tuberculin as a diagnostic agent. The movement inaugurated should mark a departure in hygienic methods of practice.

HISTORY OF THE HERD.—The Clairemont herd of Jersey cattle was established about 1882–83, and springs from a number of imported cows which were bought at that time. Frequent additions to the herd have been made, from time to time, of animals bought in New York, Baltimore, and Canada, and none but the choicest individuals have been selected, for which high prices have been paid.

All of the leading strains of Jersey bulls have been used, and to-day the Alphea, Rioter, Stoke-Pogis, Coomassie, St. Lambert, and Guilderoy blood is found represented by many splendid animals.

Every precaution has been taken to preserve the health of the stock and to increase their constitutional vigor. Inbreeding has never been practised, and the stables and animals have always been cared for in the best manner.

If good ventilation, the choicest of food, plenty of exercise, and pure water are potent factors in preserving the health of animals, this herd has been supplied with all of the conditions favorable to the most perfect health.

The herd has been regularly examined by experts, and the present outbreak of tuberculosis was discovered but a few weeks ago. In the rare cases in which the disease has heretofore been detected, the affected cattle have been destroyed at once, and their places in the stable disinfected.

By the use of tuberculin the disease was discovered in animals that seemed to be in perfect health, and it was not until this discovery that the heroic measures adopted were decided upon.

Experts hold that tuberculosis prevails to a great extent in many of the large herds of the country, and that it can be eradicated only by promptly killing all suspected animals. All agree that it is better to kill some suspected animals and find them free from tuberculosis, than to allow a single suspected animal to remain in a herd.

Mr. Gillingham's action is an example of public-spiritedness that has been seldom equalled, and the

public would profit immeasurably if others would follow a similar course. The sacrifice of animals worth thousands of dollars must command the warmest admiration.

Remarks by Dr. Pearson, *Assistant Professor of the Theory and Practice of Veterinary Medicine in the University of Pennsylvania.*

I was requested by Mr. Joseph E. Gillingham, several weeks ago, to examine a cow in his herd which did not seem to be doing well, and I found it suffering from tuberculosis. The animal was killed the next day, and the diagnosis was confirmed by the post-mortem examination. Thereupon I made a careful physical examination of the entire herd, and found five cows affected with the same disease, all of which were promptly destroyed. A short time after this, a fat cow that would not breed was killed for beef, and it was discovered to be in a highly tuberculous condition. This caused me to suspect that the disease might be more prevalent than we heretofore had reason to suppose, and with the object of detecting the affected animals it was decided to use tuberculin as a diagnostic agent. It is well known that tuberculosis in cattle is exceedingly difficult to diagnosticate, and that there are no physical signs by means of which we can recognize any but well-advanced stages of the disease. It is for this reason that tuberculin is so valuable as a diagnostic agent. The subcutaneous injection of a small quantity of tuberculin is followed by elevation of the temperature of a tuberculous animal, but not otherwise. These are, at least, the results that have been obtained by numerous foreign investigators, and by the Tuberculosis Commission of the Veterinary Department of the University.

Tuberculin has now been used on hundreds of cattle, and with the most satisfactory results. Of course, nothing is absolutely infallible, and there are a few cases on record in which the characteristic reaction to tuberculin failed to appear. But we must remember, in this connection, that many incompetent persons have experimented with tuberculin, and that of the vast literature of the subject some is untrustworthy.

It has also been said that tuberculin will cause a reaction in animals suffering from chronic inflammatory diseases other than tuberculosis; but it is well to call attention to the fact that tuberculosis frequently occurs in association with other diseases, and that in these cases the rise in temperature may have been due to undiscovered tuberculous lesions. That this may happen is shown by an occurrence in Germany. A cow was given an injection of tuberculin, and reacted characteristically; she was killed, and tubercles sought, but none were found. It was thought that the agent had failed, until the animal had been hung up and the vertebral column divided, when well-developed tubercles were found in the bones of the back.

In the few cases in which reactions followed the use of the agent and post-mortem examinations have failed to disclose the existence of tuberculosis, may not similar conditions have been present? In all, seventy-nine of Mr. Gillingham's cattle have been tested with tuberculin, and of these thirty have reacted in a manner that has been interpreted as indicating the existence of tuberculosis.

Of these, two have been killed, and were found to be diseased. After discovering how prevalent the disease probably was in the herd, the question of the disposal of the animals became the all-important one. Three courses were open: The animals might have been kept, as they were all apparently in good condition and appeared well, and many were yielding large quantities of milk; or they might have been sold, for they seemed to be in perfect health, and would undoubtedly have brought good prices; or, lastly, they could be killed, and thus the danger of contamination of the other animals and of the milk be removed. Mr. Gillingham did not, for a moment, consider any but the last method of disposing of the animals. As soon as tuberculosis was discovered, he ordered the affected cows destroyed, and the milk from animals known to have tuberculosis has never been sold or used. The remaining healthy animals will be placed in disinfected stables, frequently examined for incipient tuberculosis, and strictly kept from associating with suspected animals. In this way it is hoped that the progress of the disease will be checked, and the health of the remaining animals preserved.

Remarks by Dr. Guitéras, *Professor of Pathology in the University of Pennsylvania.*

It is seldom that an opportunity like the present offers for experimentation on so large a scale. Here, indeed, the public spirit of the owner of these animals has vied with the magnitude of the subject. The occasion is, therefore, one that well deserves earnest attention, and it may interest the public to have the problems here involved presented from their several points of view.

The facts are briefly these: A number of animals in a fine herd of cattle is suspected of being tuberculous. In a few of them the diagnosis has been confirmed by post-mortem examination. In others, apparently healthy, the suspicion rests mainly on evidence furnished by the use of tuberculin as a means of diagnosis. As you have heard, it is now proposed to kill the animals.

There are several lessons to be learned from the investigation of to-day.

1. The value of tuberculin as a means of diagnosis will be proven. When a physician pronounces a case to be tuberculous, he is nearly always right, because there is hardly a subject in medicine that has received more careful and successful study than this. Occasionally, however, the physician will find that his suspicions have been unfounded, or, more often still, he will find tuberculosis when it was not suspected. It appears that tuberculin can reduce very considerably the number of such errors. The experiments made in Karlsruhe, Dresden, and Dorpat, and in France, show that the masked tuberculosis of the lower animals may often be detected by means of tuberculin.

2. Our attention should be called to the example that is to be given to-day of an earnest and grave consideration of a question relating to the public health. Of all medical problems none equals in importance that of tuberculosis—a disease that causes one-seventh of the deaths of the human race. Whenever it can be clearly shown that its progress can be arrested in any direction, no sacrifice is too great if it brings about the desired end. Tuberculous cows are a menace to the public

health. The following facts will leave no doubt as to this. The meat of a tuberculous cow contains the microbes of tuberculosis. Even after such meat is cured by smoking or salting, it can by inoculation be successfully used to produce an experimental tuberculosis in some of the lower animals.

Another danger is that of transmission of the disease by means of milk. In many localities it has been found that ten per cent. of stall-fed cows are tuberculous. Of these, fifty per cent. will yield milk containing the microbes of tuberculosis—milk that can be inoculated into guinea-pigs and produce tuberculosis. Of course, the material thus used by the experimenter is placed under conditions the most favorable for a successful inoculation. In the natural course of events this is far from being the case. On the contrary, innumerable agencies, some of which are unknown, render the process of transmission of the disease much more difficult than it is in the hands of the experimenter. Hence it is that we do not all have tuberculosis. But we stand between this evident source of danger and the frightful mortality that I have mentioned. I will not leave this subject without saying that a temperature of 68° C., kept up for thirty minutes, will destroy all the bacilli of tuberculosis that may be present in milk.

It is not alone in the food-supply that the products of tuberculous cows may be brought to us. Indeed, it is probable that in the majority of instances we take in the tuberculous material by inhalation, and not by swallowing. The tuberculous material taken in by inhalation has more chances of taking root, as it were, than that which is swallowed.

And how is milk inhaled? By drying wherever it may fall, and being blown about with other particles of dust. Guinea-pigs can experimentally be made tuberculous by putting some dust under their skins; and if the dust is obtained from rooms in which tuberculous patients are being treated, the chance of a successful inoculation is much greater than in the case of dust taken from other apartments. The conclusion to be derived from this is that we should not allow tuberculous patients, human or otherwise, to make tuberculous dust.

3. We shall look forward with great interest for the result obtained by the destruction of these animals. How far will the desired end of eradicating the disease be attained? How far may the young cattle be already tainted? How far may the premises be infected?

It may be possible, by this experiment, to demonstrate how tenaciously the infecting material may adhere and be renewed about premises that have once been infected, or by what means it may be destroyed.

It is by no means easy to demonstrate the success of measures of disinfection of premises against tuberculosis. I would suggest that in carrying out measures of this kind attention should be paid to the removal of all classes of vermin existing about the premises, especially rodent animals, that might be the means of perpetuating the evil. I once saw what appeared to be a successful disinfection of a country house against tuberculosis, and it was signalized by the destruction and driving away for months of mice, bats, and insects. In disseminating the germs of disease there can be no doubt of the pernicious activity of these agents.

REMARKS BY DR. SHAKESPEARE, *lately U. S. Commissioner to Investigate Cholera in India and Spain.*

We learn from the census of 1880 that we possessed in this country about 43,400,000 cattle, 49,000,000 sheep, and 51,800,000 swine. Of these animals, it is the common experience that cattle and swine suffer most from tuberculosis. Passing by without remark the ravages of tuberculosis of swine, I shall briefly endeavor to show the importance of the subject as regards the interest of cattle breeders and dairymen, and point out its relations to the public health.

1st. *As to the extent of tuberculosis among cattle.*

The statistics concerning the extent of tuberculosis in cattle are exceedingly incomplete, and for some countries entirely wanting; but it may be safely said that whatever the figures they are far short of the real truth.

Taking all cattle of all ages and uses, including calves, a low estimate of the average percentage of those visibly affected with tuberculosis is two per cent. The highest percentage of disease is by common observation found to be among the milch-cows, and it ranges in different herds and localities, from three to ten or more times the general average. It will be within truth, therefore, if we say that in 1880 there were in this country 868,000 cattle affected with tuberculosis. Every bovine animal suffering from tuberculosis will ultimately die of the disease if it be not killed. This means a loss to the farmer (placing the value per head at twenty dollars) of $17,360,000 per annum. In 1880 there were 12,443,000 milch-cows. Estimating the percentage of disease among them at ten, a conservative figure, we find that 1,244,300 were tuberculous. Fixing the value per head at thirty dollars, we learn that the loss, if these animals were not sold in the shambles for beef, is $37,329,000.

2d. *Tuberculosis is highly infectious and contagious among cattle and swine.*

It is now universally recognized by competent veterinarians and pathologists that tuberculosis is virulently infectious and contagious among cattle and swine, and it is an established fact that as a rule higher-bred and well-cared-for herds suffer most from its ravages. Once started in a herd, unless the most vigorous and judicious means are early enforced for stamping it out, it bodes the slow but certain destruction of the majority, if not indeed of the whole. The infectious principle is contained in the material that comes from the diseased parts; that is, in the matter which is coughed up from the lungs, and is either swallowed or thrown off in the act of coughing. The bowels are often ulcerated. The excrement, therefore, contains the discharges from these ulcers, as well as the matter thrown off from the lungs which is swallowed. This infectious material has been, unfortunately, found to be highly resistant to the action of the ordinary natural agents of destruction, such as drying, freezing, and the like. The excrement and the matter expectorated, therefore, infects for a long time the stables and other places frequented by the affected animals, becomes dry, powdered, and rises in the dust, to be inhaled and swallowed by healthy companions, that in their turn contract the disease, and themselves form new centers of infection. It seems to be pretty clear also that sometimes, in cattle, the disease is transmitted to the offspring from a tuberculous bull,

who may be suffering from a concealed tuberculosis of the genital apparatus.

3d. *Absolute necessity for the enforcement of vigorous measures to eradicate the plague, and economy alone in their prompt and unstinted adoption.*

Experience has proved the utter uselessness of temporizing, by trusting to quarantine of visibly affected animals and disinfection of stables, etc. The only measure that promises any degree of certainty to arrest and prevent further ravages in a herd, is the prompt destruction of not only all visibly affected animals but also of *all suspected animals*, accompanied by as thorough a disinfection of the surroundings as is known to modern science. Mr. Gillingham has, in my opinion, in deciding to follow the course recommended, done well from the standpoint of advanced public spirit. But he has adopted a course which in the end—notwithstanding its great first cost—will most benefit his own pocket. *It is unquestionably the economical course.*

4th. *The constant danger to the public health from tuberculous cattle.*

I have now reached the most important part of this question for the general public.

Tuberculosis in the human being is possibly more prevalent than among cattle. It is estimated by reliable mortality statisticians that from one-fifth to one-seventh of all deaths are due to some form of tuberculosis. The disease is now recognized to be less hereditary in the human being than it is infectious. There is no fact better established in medicine to-day than that the human being who has no hereditary tendency whatever to tuberculosis can acquire the disease by taking into the system the infectious principle of the disease. One of the most frequent modes of infection in man is by inhalation. But it is also certain that in the laboratory the disease can be easily produced artificially in animals experimented on by way of the digestive canal.

There is ample evidence that a large percentage of tuberculous milch-cows produce milk that contains the infectious principle of the disease. The use of such milk for infants' food without boiling constitutes an undoubted danger that they may become infected. In fact, since tuberculosis in the human race has become better known it has been found that in infants and young children in some large cities the mortality from some form of tuberculosis is far greater than has been generally believed, amounting in some localities to one-fifth of the deaths in the young. The significant fact in this connection is that it is most frequently some part of the digestive passages that become first affected. In conclusion, I wish to say that the experience of Mr. Gillingham is by no means single or at all uncommon. It is, however, uncommon for one in his situation to adopt so wise a course. I wish to enforce his experience as one more of the numerous examples of the necessity for the general public in large cities to see to it that there is proper inspection of their meat and milk supplies.

Remarks by Dr. A. C. Abbott, *First Assistant in the Laboratory of Hygiene, University of Pennsylvania.*

Prior to the introduction of tuberculin by Koch, bacteriological studies were directed more to checking the spread of infectious diseases by means of vaccination with either modified organisms or their nutritive products than to the therapeutic employment of these substances in the treatment of disease already in progress.

The method employed by Pasteur for the treatment of rabies, which, in many respects, appears to be analogous to the method of Koch, though certain essential points are lacking to permit our making the positive statement, was the only therapeutic employment of what seem to be the products of growth of bacteria, or modifications of the substances composing the bacteria themselves. I say, seem to be, for we are not yet in a position to say that bacteria are the agents underlying the condition known as rabies.

Until the introduction of tuberculin the method in vogue for preventing the spread of infectious diseases was, in the main, that of causing a mild or modified form of a disease by inoculating the animal with the organisms concerned in its production after their virulent character had been so altered by chemical or thermal agents that they no longer possessed the power of producing the malady in its normal intensity. This modified attack often afforded immunity against a subsequent attack of the same disease.

Another common method aimed at causing certain indefinite reactionary changes in the tissues by the introduction into the animal of the chemical products of bacterial growth from which the organisms that had produced them had been carefully separated by filtration.

In both of these methods the application of high temperatures, particularly in the latter, was fatal to the success of the experiment, for the virtues of the immunity-affording substance that existed in the chemical products of these special bacteria, that had been studied in this direction, were entirely destroyed by these temperatures.

It is plain, therefore, that, unless the separation of the living and virulent organisms from the chemical products that were employed as a vaccine was perfect, it was quite possible to cause the appearance of fresh cases through these inoculations instead of checking the spread of the disease.

By the method employed in the preparation of tuberculin such an accident is not possible, for since its virtues are not destroyed by the action of heat of sufficiently high temperature to kill all living bacteria that might have been concerned in its production, this exposure to high temperature forms a regular step in the routine of its manufacture—a step intended to render the material harmless.

Whether we are justified in saying that the active principle of this substance, tuberculin, is the product of growth of the bacilli, or the bacterio-protein of the bacilli themselves, it is not at present possible to say with certainty, as in its manufacture both substances are to a degree spared. It seems reasonable, however, to consider the systemic reactions that appear in tuberculous animals after inoculation with this agent as due, in all probability, to the combined action of both substances.

As we are now aware, tuberculin is the concentrated fluid medium in which the tubercle bacilli have been growing. Its preparation, in short, is as follows: Tubercle-bacilli are cultivated preferably upon fluid media

to which 6 to 7 per cent. of glycerin has been added. When the culture has reached the maximum of its growth it is subjected to a degree of heat sufficient to destroy all living bacilli. It is then carefully filtered through unglazed porcelain and the filtrate is evaporated over the steam- or water-bath to the proper degree of consistency.

The statement that tubercle-bacilli have been found in tuberculin, not only in that supplied by Koch, but also in samples from other sources, is perfectly true; but the impression that this statement, stopping where it does, is likely to make upon the minds of those unacquainted with the method of preparing this agent, is by no means in accord with the true state of affairs. The method of preparation of tuberculin, as we have seen, insures the death of all living tubercle-bacilli from which it is extracted by subjecting them during the process to a degree of heat for a length of time quite sufficient to render them inert, in so far as their power to produce tuberculosis is concerned. For this reason it is by no means essential to the safe employment of tuberculin as a diagnostic agent that the fluid be deprived of all these dead and inactive organisms. The only undesirable results that might, and indeed would be very apt to occur, are purely local results—results finding expression in slight suppurative processes at the point in the tissues at which the dead bacilli accidentally present in the tuberculin are deposited. Koch, Prudden and Hodenpyl, Weil, Maffucci, Wissokowicz, and others, in their published accounts of experiments with this agent, all call attention to the local suppurations that sometimes occur at the point of inoculation, due, most likely, to the pus-producing properties of the proteid substances composing the bodies of the dead bacteria themselves—a process, however, that is in no way connected with general tuberculosis, and is of itself not of a dangerous nature.

As to the danger of using the milk of cattle that have been inoculated with tuberculin as a means of diagnosticating tuberculosis which is so slightly advanced as not to be recognized by any other means, I think there can be but little fear, and still less from its employment in non-tuberculous animals. This, however, is not the case with the milk of cattle in which the disease is more or less advanced, as has been pointed out by a number of observers, particularly Bang, Tschucca, and Ernst. In these cases there is not only danger in the immediate use of the milk, but, by keeping, this danger is increased, because, as has been observed, the bacilli not only retain their life properties, but actively increase and multiply in the milk in which they are located, retaining all the while their disease-producing peculiarities. In a series of experiments performed by me, and published two years ago in the *Johns Hopkins Hospital Bulletin*, I showed clearly that milk, as it comes from the shops, is an excellent medium upon which to cultivate these organisms. From our present knowledge on this subject, there is doubtless a greater amount of infection through this agent than is ordinarily supposed, particularly in the case of children, who depend so largely upon milk as an article of food. Indeed, several cases of apparently direct infection from the use of milk of tuberculous cattle as food for infants have been published. Where no rigorous control of dairies supplying milk to the market exists, the only safeguard possessed by the public against possible infection through this medium is the protection afforded by sterilization of the milk employed, either by boiling or through the employment of steam-sterilizers.

In regard to butter and cheese, it has been shown by investigations conducted at the Imperial Health Bureau, of Berlin, that tubercle-bacilli may and do retain their vitality in these substances frequently for weeks.

SOCIETY PROCEEDINGS.

BUFFALO CLINICAL SOCIETY.

Meeting, March 12, 1892.

DR. MYNTER read a paper on "The Treatment of Coxalgia," illustrated by cases. He considered one point in particular, namely, operation. He described the pathology of the trouble as follows: A local tuberculosis develops in the neck of the bone, with subsequent perforation into the joint and resultant coxitis. Because in resections performed at a late stage, inflammation of joints is usually found, it was supposed that the disturbance originated in the joint; but this is not the case. The synovitis and arthritis are usually results of the primary process in the bone. The inflammation may extend downward and cause a chronic osteomyelitis.

In treatment orthopedic surgeons attempt by extension to overcome the contraction. The contraction but indicates that the local disease has perforated the joint. Extension prevents the degeneration of the muscles, but it is only a symptomatic procedure, and not directed against the cause of the disease. In early cases, when good hygienic surroundings can be provided, it is well to wait a short time, to see if recovery will spontaneously take place; but such a result is only to be anticipated under the most fortuitous circumstances.

The injection of iodoform into a coxalgic joint is also but another symptomatic method of treatment. It will do little good unless the starting-point of the disease is found and radically treated.

When tuberculosis is found in a gland or in bones elsewhere, the surgeon endeavors to remove the disease by enucleation or curetting. Why should not the same principle be applied in the treatment of hip-disease? The point may be illustrated by a case: A patient is ill for two or three weeks, with tenderness and swelling around the neck of femur, showing that a local process is going on. A long incision is made down to the bone, exposing its anterior surface; then, by flexing the thigh, the whole lower portion of the neck of the bone can be plainly seen. A tuberculous abscess is found, its contents evacuated, and the wound is closed. Two weeks later sudden pain appears at hip, which seems to indicate perforation of the joint. Resection is performed two weeks later. The joint appears healthy; but on splitting the head and neck of the femur the diseased process becomes manifest, as seen in the specimen exhibited.

Amputation in hip-disease usually becomes necessary when a chronic osteomyelitis attacking the shaft of the bone has occurred. In one case of resection the bone

was diseased in its entire medulla down to the condyles. With a long spoon the canal was scraped from above downward, and a drain of iodoform gauze inserted. All symptoms disappeared, and the patient is on the highway to recovery.

It is thus seen that such cases can be treated without amputation.

Is it proper to treat symptoms for six years by means of splints, extension, etc., and leave the disease pursue its own course? Dr. Mynter stated that he had performed twelve resections in the preceding two years, with two deaths—one from intercurrent scarlatina; in all of the others perfect joints and free motion had resulted. Two of the cases were presented in apparent perfect health. Six had been shown on previous occasions.

In the discussion, Dr. Tremaine said that each case is a law unto itself. There are two schools in regard to the pathology of hip-joint disease. One believes in the strumous habit or diathesis, and assigns to trauma the exciting influence. The other school claims that tuberculosis is the sole cause. For every germ a certain soil is necessary, upon which it will more readily develop. Such a soil is the scrofulous or strumous habit. It is claimed by some that in many cases tubercle-bacilli are not found.

In the majority of cases an ostitis is present. It seems the rule that the process is an ostitis in the head of the bone, produced by trauma in a person of strumous habit.

In treatment, extension affords physiologic rest, so necessary in the rational treatment of all inflammation. It also serves to keep or pull the articular surfaces from each other; its purpose is not only the prevention of contractions.

In a large number of cases cures have been effected by extension, when applied early.

It is difficult to tell at the outset whether the disease be due to tuberculosis, to synovitis, or to ostitis; and it is best to give the patient the benefit of the doubt, using rest and extension; and when necrosis occurs, then resection, but only in young subjects.

Dr. Roswell Park stated that hip-joint disease (coxalgia) is always essentially tuberculous. Chronic synovitis is not coxitis, nor does it produce the same early symptoms, so characteristic of tuberculous disease.

Tuberculosis is a degenerative and destructive process. The other affections of the joint are regenerative, causing, like tuberculosis, deformities, but of a different nature.

Primary synovitis is rare, occurring probably in one case of ten. The diathesis itself is a most important diagnostic symptom.

In treatment, extension, preferably called traction, is now the recognized practice the world over. In a healthy joint the atmospheric pressure is very great, from fifty to sixty pounds being necessary to overcome it, hence the usual traction will do little to separate the surfaces; but when ligaments are worn and diseased, then traction is too late and resection is necessary.

The only object, therefore, that extension can have is to produce physiologic rest; and in the early stages of the disease it has yielded good results, although the advocates of the system are satisfied and speak of cure when ankylosis has been obtained. This is but substituting one evil for another; it is not cure.

Resection followed by a movable joint is far more to be preferred. Reports of cases are not necessary to fortify Dr. Mynter's position; the specimens of bones shown, split open, with the diseased process plainly visible, are quite sufficient. When several joints are affected, one after the other, they should be treated successively. In one case, in which resection of shoulder-joint, hip-joint, and elbow-joint was performed, and the shafts of one or two other bones were scraped, the patient recovered, whereas the result would, no doubt, have been otherwise had this heroic treatment not been carried out.

Dr. Heath stated that the treatment often depends largely on the social position of the patient, his environment, etc. Many cases get well without operation. Ankylosis is not cure, but as a result it is as good as the shortening that follows resection.

In closing the discussion, Dr. Mynter expressed the belief that when traction was exerted, the knee-joint in time became affected, becoming relaxed and unsteady. In one case of multiple joint-disease, the right knee-joint was first resected, then two months later the left hip. The patient died of scarlatina.

Trauma is often the primary cause. Resection is at once performed in every case. Dr. Mynter had had only one case under his care in which a cure was obtained by traction, and this case was probably not one of hip-disease. Physiologic rest is no doubt proper at first; but when decided febrile symptoms, crepitus, and tenderness around the neck of the bone appear, then operation is indicated. The process will extend unless so treated. Abscess is often a symptom; it is usually extra-articular, being situated in the head of the bone or in the trochanter. When the tissues have been divided, the abscess should be followed up to see if it communicates with the joint. Amputation has been performed when resection would no doubt have sufficed.

White, of Manchester, states that in 100 cases he had a mortality of 3 per cent., and the results were far better than ankylosis.

Under orthopedic measures from 10 to 15 per cent. die of tuberculosis of other organs. This is not the case after resections.

Cure is usually obtained in three months. It is a good rule first to try the anterior incision, and if the joint is affected, then resection should be performed.

OBITUARY.

DR. D. HAYES AGNEW.

Dr. D. Hayes Agnew died at his residence in Philadelphia on March 22d, after a brief illness. Dr. Agnew was born in Lancaster County, Penna., in 1818. He received his preliminary education principally at Moscow University, at Jefferson College, Canonsberg, Penna., and at Newark, Delaware. His medical training was obtained at the University of Pennsylvania. He was graduated in 1838, and began the practice of medicine in Lancaster County. After a short time, however, he withdrew from medical practice and engaged in business, in which, however, he was not very successful. He returned to

the practice of medicine in Philadelphia about the year 1852.

During his residence in the country he continued the study of anatomy, including dissection, under all the disadvantages incurred at a distance from the natural source of anatomic material. On resuming practice in Philadelphia, he at once began to teach anatomy in what was known as the Philadelphia School of Anatomy, in Chant Street. His success here was immediate and phenomenal, and so long as he continued to teach, he drew large classes from both of the schools of medicine then in existence.

In 1854 he was chosen one of the Surgeons to the Philadelphia Hospital, where he had his first opportunity of applying to practice his wondrously accurate knowledge of anatomy. His connection with the Philadelphia Hospital was further distinguished by his originating the present Pathological Museum, of which for a time he was curator. In 1863 he was appointed Demonstrator of Anatomy and Lecturer on Clinical Surgery in the University of Pennsylvania. In 1870 he was elected Professor of Operative Surgery, and on the resignation of Dr. H. H. Smith, in the following year, he was appointed to the position of Professor of the Principles and Practice of Surgery. He continued to hold the last position, in which he made his most signal reputation, until December, 1887, when he resigned, his resignation to take effect at the close of the session of 1888–89.

Dr. Agnew was one of the Surgeons to the Pennsylvania Hospital and to the Orthopedic Hospital in 1865. He retained these positions until the demands upon his time made it impossible to hold them longer—in the case of the Pennsylvania Hospital, with a brief interval, for eighteen years; in that of the Orthopedic for a shorter time.

Although Dr. Agnew laid the foundation of his reputation as a teacher of anatomy, and prepared himself for his success as a teacher and practitioner of surgery, it was in the Chair of Surgery at the University of Pennsylvania that his reputation culminated. His lectures were characterized by lucidity and an absence of all attempt at oratorical display. The accuracy of his anatomic knowledge made the subject of operative surgery particularly simple to him, and his lectures upon this branch were most attractive and eagerly attended by students and practitioners. His ability in this direction shone forth still more brilliantly in the surgical clinic that for so many years he held every Wednesday at the University.

Dr. Agnew's writings were, in the main, short papers on practical subjects, until he wrote his great book upon *Surgery*, finished in 1878; this was the crowning act in making world-wide a reputation that was already national. His *Surgery* has been translated into the Japanese language.

His connection with the Garfield case and the modesty with which he performed the duties incident to this trying position, did much to attract the attention of the non-professional world and endear him to the nation.

Dr. Agnew continued to practise actively until a few days before his death, although for several years previously to this event he had been making an effort to withdraw from work. How difficult this was appeared on the very last day on which he was out, when the fatigue of an operation and several wearisome consultations seemed to be the immediate cause of his last illness. He had been ill earlier in the winter with influenza, and seemed not to have entirely recovered his strength, although he expressed himself to the writer only a few days before his illness as feeling unusually well, and certainly he had greatly improved in appearance of health since the 1st of February.

The secret of Dr. Agnew's success may be said to have been, first, his thorough training in anatomy; secondly, the reputation that he acquired as a teacher of anatomy; thirdly, his skill as an operator; fourthly, his unwearying industry; and fifthly and last, but not least, his personality.

Of a commanding and dignified presence, with the courage of his opinions, associated with such a modesty and utter contempt of acting for effect, he has been, at least for the last decade, one of the most conspicuous figures in the medical history of the country. Prominent, also, in his relations with medical men was the feeling of confidence that he inspired, and the certainty with which it was known that he would never betray the trust reposed in him—would always protect with his towering reputation any weaker points that the inexperience of his younger colleagues might have betrayed.

WILLIAM H. BUNCE, M.D., died in Oberlin, Ohio, February 13, 1892, where he had practised medicine from the time of his graduation. Dr. Bunce was born in Paterson, N. J., June 29, 1830. He came of ancient Scottish stock. He was married in June, 1852, to Eleanor S. Conant, who, with two daughters and one son (Dr. Wm. C. Bunce), survives him. Dr. Bunce was a Surgeon, with rank of Major, during the war; and was connected with a number of medical societies, in which he had at various times held prominent positions. He has been known as one of the leading surgeons of Northern Ohio. There was a peculiar gentleness in his ministrations to those that came under his care, which made them feel that he was not only their physician, but also their friend. It may be well said that by his skill and worth he has built a monument that will live after him, in the hearts of those that learned to love him.

NEWS ITEM.

Sixth Annual State Sanitary Convention of Pennsylvania.—The State Board of Health of Pennsylvania will hold the Sixth Annual State Sanitary Convention in the city of Erie. A hearty invitation is extended to all persons in any way interested in sanitary matters to visit Erie upon this occasion. The Convention will be held March 29, 30, and 31, 1892. It will be called to order on the 29th, and end on the afternoon of the 31st. Commutation rates can be obtained by writing to DR. WILLIAM B. ATKINSON, Medical Inspector, 1400 Pine Street, Philadelphia, Pa.

BOOKS AND PAMPHLETS RECEIVED.

The Therapeutic Aspect of Some Ovarian Disorders. By Edward W. Jenks, M.D., LL.D. Reprint, 1891.

Ueber Autotuberkulinisation beim Lupus. Von Dr. P. G. Unna. (Aus Berlin. klin. Wochenschr., 1891, No. 25.)

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ORIGINAL ARTICLES.

EHRLICH'S TEST OF THE URINE IN TYPHOID FEVER.[1]

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IN 1882 Ehrlich announced the discovery of a reaction that he claimed to be characteristic of the urine of typhoid fever. Sulphanilic acid, an amido-derivative of the benzine group, when treated with nascent nitrous acid, forms diazo-benzene-sulphonic acid, which is decomposed with facility, and exhibits the greatest affinity for aromatic and other compounds. The significance of Ehrlich's reaction has been variously estimated, some extolling it as an important, or even pathognomonic, feature of typhoid fever, while others regard the reaction as empirical, unreliable, and unscientific.

Rütimeyer, in 260 cases, found the reaction lacking in health, hysteria, myelitis, specific hepatitis, diabetes, pyelonephritis, jaundice, cholelithiasis, surgical affections, and non-malignant ovarian cystomas. It is occasionally found in esophageal and gastric carcinoma, serous pleurisy, chronic nephritis, tuberculous meningitis, cardiac failure, caries, old abscesses, pyemia, and scarlatina, and still more frequently is it present in croupous pneunonia, pulmonary actinomycosis, carcinoma, sarcoma, and tubercles of the peritoneum.

The author quoted regards the reaction as diagnostic, always absent in febrile catarrhs, and diagnostically second only to the eruption and splenic tumor. If not found in the first and second weeks, the affection is not typhoid, or is of the mildest form. It sustains no relation to the course of the fever, is not influenced by medication, and is found morning and evening. Its intensity bears no relation to the prognosis, and it is apt to occur in relapses.

Bacnacci believes the test bears some relation to sugar and acetone, and states that iodol, sozoiodol, thymol, and strychnine, will produce the reaction. He asserts that it is usually absent from typhus, variola, pneumonia, and acute enteritis.

Simon found it in typhoid fever and tuberculosis alone, and in four only of twenty-six cases of typhoid was it absent.

Taylor asserts that the reaction is wanting in acute general tuberculosis, lobular and lobar pneumonia; that it occurs in measles, but seldom in rheumatism, exceptionally in the healthy, in a few cases of acute and chronic pulmonary tuberculosis, and with more than average frequency in the albuminous urine of acute and chronic nephritis.

With the intention of ascertaining, if possible, the precise value of the test, the writer undertook a series of 600 urinalyses, covering a period of ten weeks, and embracing 275 medical and surgical cases. The method chiefly employed was the following: Two solutions are kept in separate bottles. One contains 5 c.c. of hydrochloric acid, with sufficient water to make 1000 c.c., and is saturated with sulphanilic acid. The second bottle contains a ½ per cent. solution of sodium nitrite. Forty c.c. of sulphanilic acid solution are added to 1 c.c. of the sodium nitrite, and the two thoroughly mixed. Of this mixture 1 c.c. is added to 1 c.c. of urine, and the two shaken forming a yellow solution. Drop by drop 1 c.c. of ammonium hydrate is allowed to trickle down the side of the tube to form a supernatant white layer, between which and the yellow the least shade of garnet is rendered striking by contrast. In a number of cases 1 c.c. of urine was shaken with 6 c.c. of absolute alcohol, filtered, and the filtrate treated as indicated. Only a hue between eosin and garnet was recognized, and yellow and brown rings were disregarded. Distilled water was used in the solutions, and accurate measures maintained in their preparation and use. As the reaction is very delicate, the test tubes were washed in fresh water twice after each test to eliminate contamination. The solutions were kept separate, and fresh reagents used with each analysis, since the sulphanilic and nitrous acids, when combined, decompose rapidly.

In analyzing the cases observed, we noted the clinical course of the disease, the presence or absence of the reaction, its first appearance and duration, the period of illness prior to admission, the fever, the urine (reaction, specific gravity, urea, albumin, casts, and occasionally sugar), especially the decline of the disease, relapses, whether the temperature subsided or the test faded first, the ultimate issue, and in selected cases the absolute-alcohol modification.

[1] Read before the Cook County Hospital Clinical Society, November 15, 1891.

One hundred and thirty cases of *typhoid fever* were analyzed. From two undoubted cases the reaction was absent throughout the disease, even at the fastigium, and the reaction was lacking in six in the period of defervescence. The test bears no relation to the ultimate issue, being equally brilliant in fatal and recovering cases. Only in isolated cases can we observe the first appearance of the reaction, as we rarely see the disease in its incipiency, or the patient gives unreliable information through ignorance, delirium, or imperfect understanding of English. The exact relation, therefore, of the reaction to the first stage of the disease must be more or less indeterminable, and, scientifically, the appearance must be dated solely from the admission of the patient. Relapses constitute the only exception. In sixty-three cases in which the exact date of disappearance was noted, the average life of the test was thirteen days, although in cases the reaction lingered until the forty-second and fiftieth days, as determined by repeated daily analyses. These results somewhat exceed the limits set by Simon. The reaction bore no direct ratio to the temperature, although it was most brilliant at the fastigium. The later pyrexia of typhoid fever is probably due to secondary infection, and not to the specific process. This supposition explains the usual persistence of the pyrexia after the disappearance of the reaction. It has been said that Ehrlich's test disappears when the morning temperature becomes normal. Our results do not confirm the assertion. In a few cases both disappeared together. Usually the pyrexia outlives the reaction, and in seventeen cases Ehrlich's test was obtained after all fever had disappeared, even as late as ten days after normal temperature had been established. In some cases the persistence of the reaction was attributable to coincident nephritis or tuberculosis, but in the majority these and other factors, even febrile albuminuria, had disappeared, or could not be demonstrated. Albumin was found present in thirty-five, and absent from ninety-five cases. Relapses occurred in twelve cases, and the reaction reappeared in nine of these. The duration in these varied from two to nineteen days. In three cases of typhoid the absolute alcohol test was negative.

Enteritis; Febricula. Of nineteen cases the reaction was well marked or brilliant in six. In two of the six albumin was present. The absolute alcohol test was variable, but the reaction was obtained in two cases by its use. It is important to note that the claim was made for Ehrlich's test that it differentiated between typhoid fever and enteritis and febricula. The inference from the results noted, and the fact that the reaction could not be found in two typhoidal cases, is obvious. The presence or absence of albumin may obscure the interpretation of the reaction. It is sometimes difficult to differentiate between typhus levissima and acute enteritis, and it is here that the test is most frequently unreliable.

Malaria. 1. Case of chronic malaria—inveterate spleen case. There was well-marked reaction; absolute alcohol was not employed. 2. Quotidian—lasted one week; no albumin; brilliant reaction; absent with absolute alcohol. 3. Quotidian—no albumin; brilliant reaction; no absolute alcohol test. 4 and 5. Quotidian—no albumin; reaction absent with and without absolute alcohol.

Tuberculosis. In 9 cases of acute and chronic pulmonary tuberculosis the test was brilliantly displayed, and in all but one disappeared with absolute alcohol. In 1 case of intestinal tuberculosis that entered *in extremis* the reaction was very pronounced (autopsy). Dr. F. X. Walls has very kindly given me the result of his investigations upon 22 cases other than typhoid. He found the reaction present in 6 cases of tuberculosis of the lung, pleura, intestine, and peritoneum, and absent from 1 case of pulmonary tuberculosis; also brilliant reaction in 3 cases of miliary tuberculosis (autopsies). In the following lists Dr. Walls's cases will be noted by his name in brackets. In surgical tuberculosis the reaction was well-marked in sacro-iliac tuberculosis, 2 cases; brilliant red in tuberculosis vertebrarum, 1 case; brilliant in tuberculous lumbar abscess, 1 case; moderately well developed in the third stage of tuberculous coxitis, 2 cases; absent from tuberculous coxitis, first stage, 1 case; absent from 3 cases of tuberculosis of the knee-joint several weeks after operation, and present in 2 shortly after resection.

Rheumatism. Chronic, absent from 1 case. Subacute, 6 cases; present in 3, but absent with absolute alcohol. Acute, 5 cases; present in 1. (Albumin absent from all.) Present in 33 per cent. of all cases.

Nephritis. Chronic parenchymatous, absent from 4, present in 2 (from 1 case absent with absolute alcohol). Chronic interstitial, 9 cases; present, though variable, in 6. Acute, 3 cases; brilliant in all, but absent with absolute alcohol. These are aside from cases observed in connection with any other disease. Present in 61 per cent. of all cases.

Diabetes. The fermentation test was employed to avoid the fallacy of confusing sugar with those organic acids which reduce Fehling's solution, and, according to Simon, also give Ehrlich's reaction. No albumin in either case. Ehrlich's test very brilliant in both cases, and it persisted in one with the absolute alcohol modification upon a slight rise of temperature, lasting two days, for which no cause could be ascribed.

In the large majority of the following cases either

autopsies or operative measures confirmed the diagnosis.

Carcinoma. 1. Of stomach, with secondary deposits in liver; no albumin; brilliant. 2. Of stomach, cardiac orifice; well marked; no albumin. 3. Mammary carcinoma, absent. 4. Mammary carcinoma, fairly well marked.

Syphilis. Tertiary; brilliant in 1 case. Specific periostitis, well exhibited; no albumin; present with absolute alcohol. Absent from 3 cases.

Cardiac lesions. Mitral regurgitation, brilliant with and without absolute alcohol; no albumin. Mitral lesions, no albumin; 3 cases; brilliant in 2 and absent from 1 [Walls]. Cardiac degeneration (? fatty), no albumin; brilliant, but variable. Mitral regurgitation, absent. Aortic stenosis and regurgitation with pleuro-pneumonia and acute pericarditis; no albumin; brilliant red.

Lung. (Besides tuberculous lesions.) Lobar pneumonia, 2 cases; no albumin; brilliant reaction. Absent from broncho-pneumonia and pleurisy, and from pleurisy with effusion [Walls]. Pleuro-pneumonia, 2 cases, present [Walls]. Pleuro-pneumonia with acute nephritis, brilliant [Walls].

Plumbism, 3 cases; present in 1; no albumin; absent in 2. Walls, 1 case, absent.

Cerebral hemorrhage, 3 cases; absent in 1; fairly well marked in 1; trace of albumin; brilliant in 1; no albumin.

Present in *acute septicemia,* 3 cases in which albumin and peptones were absent; most brilliant reaction.

Chronic traumatic dry arthritis of hip-joint, 2 cases; no albumin; absent in 1; present in the other with and without absolute alcohol test.

The reaction was found once each in the following: Multiple neuritis, variable (no albumin); alcoholic gastritis (no albumin); purpura hemorrhagica (much albumin); peritonsillar abscess (trace of albumin); meningitis (albumin and casts); pyosalpinx (no albumin); abscess of abdominal wall (no albumin.

Cirrhosis of liver (no albumin). Hypertrophic, 3 cases; absent in 1, present in 2, with and without absolute alcohol. Atrophic, absent with and present without absolute alcohol. Hypertrophic, absent [Walls]. *Simple jaundice,* present three times (no albumin). *Acute intestinal obstruction,* no albumin, present in 1 case. *Acute intussusception,* both with and without absolute alcohol, brilliant. *Multiple abscess* of liver, brilliant [Walls].

Absent from—9 cases of acute alcoholism; insolation, 2 cases; chronic dysentery, 1; cholelithiasis, 1; gastritis, 1; acute mania, 2; hysteria, 3; simple anemia, 7; vomiting of pregnancy, 1; echinococcus of liver, 1; thrombo-phlebitis, 1; acute suppurative osteomyelitis, 1. Absent from suppurative meningitis, 1 case [Walls].

The two following cases would indicate how invaluable Ehrlich's test would be if it were confined to one affection or to fewer diseases than it is. The test was absent from perityphlitic abscess in which the symptoms closely simulated typhoid, the patient having anorexia, nausea and emesis, frontal headache, cough, tâche cerebrale, tympanites—characteristic temperature, tenderness, and pain, with gurgling in the right inguinal region and papular eruption almost lenticular in character. A diagnosis of appendicitis was made upon an induration over the ileo-cecal valve, and the absence of Ehrlich's test had some weight in excluding typhoid. Operation confirmed the diagnosis. Dr. Walls related a case in which a diagnosis of mania was made by a nerve specialist. A brilliant Ehrlich reaction puzzled the house physicians, who placed considerable reliance on the test. Post-mortem examination revealed a typical stage of typhoid, although there were no ante-mortem evidences of typhoid save the sulphanilic acid indication.

The indications from the foregoing analyses are formulated as follows:

1. The reaction is independent of any single disease or any group of diseases.

2. It is frequently found in urine containing albumin, peptone, biliary substances, sugar, aromatics, and possibly leucomaïnes or ptomaïnes.

3. We have failed to obtain more constant results with the absolute alcohol than without its use.

4. Ehrlich's test is not always present in typhoid, even at the acme of the disease; it was absent in 1½ per cent. of our cases. The reaction, therefore, is at best only a presumptive, and not a positive, evidence of typhoid. Its value is on a par with that of gurgling and tenderness in the right inguinal region and inferior to the temperature, roseolæ, and splenic tumor.

5. Together with more reliable signs and symptoms, as temperature, enlarged spleen, etc., it may contribute to a diagnosis of typhoid, and conversely, when absent, in 98½ cases out of 100, the disease is other than typhoid.

6. It is found in many other diseases, some of which, in certain clinical features, may simulate typhoid—*e.g.*, septicemia, uremia, tuberculosis in its varied aspects, intestinal, peritoneal, miliary, etc., as well as enteritis, malaria, and pneumonia. In differential diagnosis, therefore, when other distinctive symptoms are lacking, the sulphanilic acid test is untrustworthy. It fails when most keenly wanted, and may be absent in otherwise typical typhoid fever.

7. If much reliance is placed in the test, a typhoid relapse may be confounded with complications. We have observed, as complications and early sequelæ yielding the reaction, acute nephritis, lobar pneu-

monia, pulmonary tuberculosis, pleurisy, etc., and would have been at a loss as to the cause if confidence had been reposed in the test.

8. Inasmuch as it occurs typically in many diseases in which the causes and elaborated products differ, and since the various compounds with which the diazo-benzene-sulphonic acid unites are as yet unknown, the reaction cannot commend itself to the scientific chemist, however it may be regarded clinically.

FORMS OF PSEUDO-TABES DUE TO LEAD, ALCOHOL, DIPHTHERIA, ETC.[1]

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LOCOMOTOR ataxia is one of the best-known diseases. Its classic array of symptoms, so familiar to all, occurs, as a rule, with a precision of type and regularity of sequence that admit of but few errors in diagnosis. Its history and course have been written so frequently and so well that little remains to be said; while, unfortunately, its prognosis admits of but such a frank statement of despair, that it has long been described as one of the most inveterate and progressive of diseases. Locomotor ataxia, however, like many other diseases, has its counterfeits. All is not necessarily lost, as was once taught, to all men who stagger in the dark, whose knee-jerks are abolished, and who have pain and numbness in the legs. These counterfeits, doubtless, are in the minority to the true ataxics, but that they are more prevalent than was formerly supposed is at least probable; and that it is highly important for the welfare of the patient and the credit of the physician to differentiate them, is apparent. This paper will discuss especially the etiology and diagnosis of these forms of pseudo-tabes, and will be based largely upon personal observation.

In 1884 Dejerine[2] described a disease which he called *nervo-tabes peripherique*, and gave the clinical histories and autopsies of two patients whose disease he had diagnosticated in life as locomotor ataxia. Both of these patients presented incoördination, anesthesia, abolition of knee-jerks, slight atrophy, and paresis, without eye or bladder symptoms. They had used alcohol to excess. The autopsies revealed pronounced inflammation of the cutaneous nerve-endings, slighter changes in the intramuscular nerves, and no change whatever in the spinal cord, nerve-roots, or ganglia. Dejerine had not found any analogous cases reported at that time in medical literature, and deserves credit for first demonstrating the striking resemblance of these obscure cases to locomotor ataxia. At about the same time, however, Dreschfeld[1] described a type of alcoholic ataxia characterized by incoördination in the gait, absence of knee-jerks, with lancinating pains, but without atrophy or paralysis. His clinical picture was strikingly like that of Dejerine, but was not supplemented by the same careful post-mortem findings. In the same year Krüche wrote a paper on "Pseudo-Tabes in Alcoholics."[2] But earlier than all of these, Samuel Wilks, in his lectures in 1878, described the drunkard's paraplegia, and said that in some cases it closely resembled locomotor ataxia. Wilks believed that the lesion was in the spinal cord, but he wrote before multiple neuritis was much more than dreamed of.

Still earlier (1867) Leudet[3] wrote an elaborate paper on chronic alcoholism in which he described the same combination of symptoms—anesthesia, hyperesthesia, disordered gait, and paresis—and in fact came near to describing what we recognize to-day as polyneuritis. In recent years the literature of multiple neuritis has grown to a vast extent. It has become, therefore, more and more necessary to differentiate the various types of the disease and to recognize its many causes. With this motive, Leyden in 1888 wrote a monograph in which he distinguished five forms, one of which he named the sensory form, under which heading he grouped the acute ataxics, and borrowed for them, from the earlier paper of Dejerine, the title of *neuro-tabes peripherica*.

It may be said in general terms that all of these cases of pseudo-tabes or acute ataxia are instances of a multiple neuritis of this sensory form of Leyden, and that most of them have probably a morbid anatomy similar to or identical with that demonstrated by Dejerine, *i. e.*, an involvement especially of the peripheral distribution of the cutaneous nerves. Hence the most common symptoms in these cases are disorders of sensation, especially anesthesia and paresthesia, with ataxia and abolition of the knee-jerk. To these must be added symptoms, in varying intensity, of involvement of the motor nerves, never perhaps quite absent, but often requiring careful and expert examination for their detection. From these ataxic cases all degrees of severity occur up to well-recognized cases of multiple neuritis, with general involvement of the sensory and motor nerves. The eye and bladder are seldom involved in these ataxic cases, but important exceptions occur. Of the great viscera, the heart and kidneys are most likely to suffer.

[1] Read before the College of Physicians of Philadelphia, March 2, 1892.

[2] Arch. de Physiologie Norm. et Patholog., 3e. sér., iii, 1884.

[1] Brain, July, 1884, p. 201.

[2] Deutsche med. Zeitung, 1884, No. 72, p. 229.

[3] "Étude clinique de la forme hyperesthésique de l'Alcoolism chronique, etc.," Arch. Gén. de Méd., 1867, vol. i, pp. 5–35.

In some cases it is quite impossible at once to arrive at a correct diagnosis. In doubtful cases the history alone may determine the diagnosis; and this history, with certain attendant phenomena—as, for instance, the blue line on the gums in lead cases, tachycardia in alcoholic cases, and paralysis of accommodation in post-diphtheritic cases—should always be most carefully investigated. In my observation by far the most frequent causes are alcohol, lead, and diphtheria. Others report arsenic, and such infectious processes as variola, typhoid fever, tuberculosis, and syphilis; also wasting diseases, as diarrhea and dysentery. Bartholow has reported cases of paralysis following bowel-disorder, which were probably examples of neuritis. Syphilis is now believed by many to be capable of causing neuritis; indeed, it may be a question whether some cases of so-called syphilitic locomotor ataxia, cured by mercury and iodides, have not been cases of peripheral neuritis. Dejerine, in another paper, described the onset of a fatal multiple neuritis in a morphine-taker; and I have myself seen amblyopia accompanied by anesthesia of the feet and legs in an excessive smoker.

The eye-symptoms are the most reliable for purposes of differentiation. None of the forms of multiple neuritis, except the post-diphtheritic kind, present, as a rule, any affection of the internal or external ocular muscles. I have looked for them always in vain in alcoholic and lead cases. In diphtheritic paralysis, however, the ciliary muscle is often paralyzed, while the light-reflex remains—the very opposite to the Argyll-Robertson pupil seen in locomotor ataxia. At the same, time there is likely to be paralysis of some of the external ocular muscles, causing strabismus; almost always associated with paralysis of the velum palati. In lead-poisoning optic neuritis is sometimes observed.

The functions of the bladder and sexual apparatus are not often affected in any form of polyneuritis, especially the ataxic form. The only case in which I have seen impairment of the bladder was in a woman with grave alcoholic paralysis, with mental symptoms, and weak, rapid heart. The involuntary passage of urine in her case was the result of her mental condition. In chronic inebriates the sexual appetite rather than the sexual power is impaired. On the other hand, locomotor ataxia, as is well known, is very likely to exhibit soon in the case impairment of sexual power and of the expulsive power of the bladder.

It is most probable that ataxia or incoördination, whether in true tabes dorsalis or in pseudo-tabes, is caused by the impairment of sensation. However caused, it is very similar in the two conditions. We have at present in the Philadelphia Hospital a man suffering with a severe grade of multiple neuritis, with wasting of the muscles of the extremities. He has an alcoholic history, although, strange to say, his disease developed rapidly after a sunstroke. This man has diminished and sluggish, not abolished, knee-jerks. His gait is typically ataxic, with elevation and flapping of the feet. He cannot stand an instant with his eyes closed; in fact, he has such a condition of *astasia* that he is sometimes compelled to keep walking to avoid falling. His eyes are normal. It has been claimed by some that the element of muscular weakness, in cases of neuritis, admits of a distinction being made between the ataxia of the two conditions, as in multiple neuritis the ataxic movement is evidently more feeble than in tabes dorsalis, and the foot is lifted higher because of the paralysis of the extensors. But in the cases of pseudo-tabes, this muscular weakness is often not conspicuous, and hence this distinction is not possible. I have recently put side by side a case of acute lead-poisoning and a typical case of locomotor ataxia for the purpose of comparing the ataxic movements in the arms, which are very marked in both cases.

The cases are as follows:

Male, aged thirty-eight years. After four months' exposure in a lead factory he began to have colic, constipation, vertigo, and headache. He then had several convulsions, and passed into a state of lead encephalopathy, from which he is now recovering. He has no paralysis of the extensors, but the shoulder muscles and biceps are paretic. He has some patches of anesthesia on the arms, hands, and legs. His walk is ataxic, and the movements of his arms markedly so. He has the blue line on the gums, no albumin or casts in the urine, and the margins of the optic discs are slightly clouded.

This man's case has been a grave one, and admits of no confusion. The ataxic movements of his arms, however, are almost identical with those of the second case, as follows:

Male, aged thirty-eight years. He may be called a case of rapid acute locomotor ataxia. The disease began with numbness and pricking sensations. The patient was soon suffering with fulgurant pains; then ataxia, with inability to walk in the dark. The arms are involved as well as the legs. The knee-jerks are abolished. For a year he has had nocturnal incontinence of urine, and when the bowels are overloaded, some paresis of the sphincter ani. The pupils are unequal and do not respond to light. There are irregular discs, with contracted arteries. There is apparently some latent iritis, and there is a posterior synechia. The man has had syphilis.

The ataxic movements in these two men are so similar as to attract attention, the only difference being that the man with lead-poisoning takes longer to perform a given action than the tabetic, probably because of the element of muscular atrophy in his case.

Motor symptoms, other than ataxia, are not conspicuous in cases simulating tabes; in fact it is the absence of marked paralysis in these cases of multiple neuritis that more than anything causes them to resemble cases of true locomotor ataxia. This was so in Dejerine's cases already referred to, in which the autopsies showed the principal changes to be in the cutaneous nerves. These are the cases which Leyden classes as his sensory forms, and calls acute ataxics. They are more often alcoholic and diphtheritic cases than any others. It is most probable, however, that none of these cases are entirely exempt from paresis in some muscles. Careful examination usually reveals some loss in muscular masses, and electrical tests sometimes solve a doubt. Paralysis may be slight, especially in the large muscles of the limbs, and may not be conspicuous when the patient is lying down, but when standing up or when executing fine movements with the fingers and toes the motor impairment is more marked.

I recall the case of a man in middle life who had diphtheritic ataxia, with anesthesia, but who had so little paralysis that he was able to be about without attracting attention. Such cases in middle life are especially likely to be diagnosticated as cases of locomotor ataxia.

In diphtheritic cases, acute sensory symptoms, such as pain on pressure over nerve-trunks and on handling the limbs, are not nearly so marked as in alcoholic cases. In all cases, however, presenting true ataxia from whatever cause, I believe a diminution or alteration of sensory function can be demonstrated by careful examination.

Rapidity of evolution is not an absolutely sure sign that the disease is multiple neuritis, because true tabes may evolve rapidly. I have under observation a case of apparently true tabes in a ship-carpenter which began and continued as follows:

Two years since, while crossing the equator, being much overheated, he took a shower-bath, by having buckets of water thrown over him. He was in good health at the time. Three hours later he began to have tingling sensations in the extremities, which he says were at first confined to one side. In a few days he was paralyzed. Later, the other side was affected, but never so badly as the right side. At present he presents a very ataxic gait, pains in the legs and back, and abolition of the knee-jerks. One pupil is twice as large as the other, the dilated iris being immobile, and the other showing the Argyll-Robertson phenomenon. He cannot stand with his eyes shut. His control of his bladder and rectum is impaired, and one ankle is enlarged somewhat like a tabetic joint. The muscular nutrition in the arms and legs is not bad, and his grip in each hand registers 80°. The man has had destructive nose-disease, but denies syphilis.

This patient's history suggests neuritis, but his present state is so exactly that of locomotor ataxia, with eye and bladder symptoms, that the conclusion is almost forced that such is the correct diagnosis.

The case of the patient from whose cord and nerves I present sections, has interest because the diagnosis of locomotor ataxia was actually made by a very expert clinician.

I. L., aged fifty-eight years, was a painter by trade. He had been exposed to lead for thirty years. He had a very clear history of many attacks of colic, constant constipation, and several attacks of wrist-drop. He had also the blue line on the gums, and that frequent result of chronic plumbism, a contracted kidney, as shown by casts, albumin, and the specific gravity of his urine. No lead could be detected in his urine. He had been an excessive drinker, but had never had syphilis. The diagnosis with which he was sent to me had been made largely upon the ataxic gait, swaying with closed eyes, abolition of the patellar reflexes and numbness, tingling and retarded sensation in the soles. I found his real condition as follows: In addition to the foregoing very evident symptoms, he had well-marked paresis and atrophy of both the extensors and flexors of the forearms and hands, as well as the biceps and deltoid muscles. On voluntary motion there was tremor rather than ataxia of the arms and hands. There were paresthesia and areas of anesthesia on the hands, legs, and soles of the feet. The legs and arms were slightly contractured. The external and internal eye-muscles were normal. Sexual power was normal, and the control of the bladder was perfect. The gait was ataxic, but flapping of the feet was not marked. The hands and feet were slightly edematous. There were partial reaction of degeneration and abolition of faradic contractility in all of the paretic muscles. Optic atrophy was noted by Dr. Gould—no doubt the result of optic neuritis due to lead. The diagnosis was chronic lead-poisoning, with multiple neuritis and contracted kidneys. The patient died in a few weeks in uremic coma. The sections show quite extensive inflammation, or degeneration due to inflammation, in the several nerve-trunks examined, with involvement, rather diffused, of some areas of the cord, notably in the lumbar region. The systemic changes of locomotor ataxia are not present.

In studying this case, in which it seems probable that the cord was involved later than the nerves, I have been reminded of the suggestion made by Leyden, that true tabes dorsalis may be secondary to peripheral neuritis of the sensory or cutaneous form. This is still further demonstrated in a recent study by Pal,[1] who, in a series of cases of multiple neuritis due to alcohol, arsenic, typhoid infection, etc., found apparently secondary changes in the posterior columns and other parts of the cord. It is also well to recall that locomotor ataxia is sometimes complicated by an attack of acute multiple neuritis.

[1] Wiener klin. Wochenschr., 1891. Abstracted in Journal of Nervous and Mental Diseases, March, 1892, p. 225.

VIBURNUM PRUNIFOLIUM: ITS PHYSIOLOGIC ACTION AND THERAPEUTIC APPLICATIONS.

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To those physicians who, like myself, are engaged in rural practice, anything throwing light on indigenous remedies is always welcome, not only because the remedy is easily procured, but because to the lot of us all falls a large share of patients who, from inability or unwillingness, fail to pay their bills. A native remedy, therefore, that enables us to lessen our drug-account and set at defiance the manufacturing pharmacist will always prove a desideratum. Such a remedy is found in the viburnum prunifolium, or black haw, and after fully testing its merits I have learned to rely upon it as deserving of much confidence when judiciously prescribed.

The viburnum is not a new remedy, but one the virtues of which I believe to be but poorly understood. It was first described by Dr. Phares, of Mississippi, in 1866, as a "nervine, anti-spasmodic, tonic, astringent, and diuretic," but he especially recommended it as a remedy in threatened abortion. His article, though eliciting much temporary interest, was soon forgotten by the mass of the profession until the remedy was rescued from oblivion by the distinguished Dr. Jenks, of Detroit, who, in 1876, read an article before the American Society of Gynecology endorsing the claims made for haw by Dr. Phares, and extolling its virtues in abortion, the nervous diseases of pregnancy, and declaring it to be "serviceable in all uterine disorders characterized by loss of blood." This last statement of Dr. Jenks is fallacious, since it is apparent that as the causes of uterine hemorrhage are various, no one remedy, unless it be astringent—and this can only be claimed for haw in a slight degree—could prove useful in all cases.

Since the publication of Dr. Jenks's article the remedy has been used by a number of physicians, and isolated reports have at various times appeared in current medical literature setting forth the value of haw in threatened abortion, menorrhagia, metrorrhagia, dysmenorrhea, the vomiting of pregnancy, stomatitis materna, etc. The remedy has been described as stimulant and sedative, mildly oxytocic and anodyne, and indeed the *United States Dispensatory*, edition of 1886, declares that while haw has been claimed to possess medicinal attributes, "its virtues must be considered apocryphal." From this mass of conflicting testimony it is impossible to determine the true value of the drug, and therefore the writer has instituted an experimental research as to its effect upon cold-blooded and warm-blooded animals,[1] from which are deduced the following conclusions:

First. Black haw, so far as these experiments indicate, exerts no influence on consciousness or sensibility.

Second. The most constant and marked effect of viburnum is upon the centers of motion. After its administration there follow paresis, paralysis of voluntary motion, and finally complete loss of all reflex power, the extent of this loss being governed by the dose administered. A first effect is paresis, which makes its appearance not suddenly, but as a gradually growing weakness; then there follows marked incoördination of muscular movement, and whatever motion is attempted is of a jerky, spasmodic character; then, the effect being pushed, there occurs, almost suddenly, complete loss of voluntary movement; and later, in fatal cases of poisoning from this drug, all reflex power is lost some time before cessation of the heart's action or of the respiration. In cold-blooded animals the pupils contract under the influence of haw, but in warm-blooded animals no effect on the pupils was noticeable. Muscular irritability is lost after lethal doses of haw, but the ability of the nerves to transmit the electric current is lost before muscular contractility.

Third. The effect of viburnum on motion, as previously described, must be due to the action of the remedy on the motor centers of the spinal cord. The fact that incoördinate movement precedes complete loss of motor power, argues that haw has some selective action on the posterior columns of the cord. The effect of haw upon the cord seems to be to hold in abeyance rather than to destroy its motor functions, since after all motor power is lost following its administration, electricity applied to the cord causes motion in the parts below, and applied directly to the nerve-trunks causes more active movement. A peculiar, spasmodic, chewing motion of the jaws was observed in some of the experiments on rabbits, and would indicate a specific action, difficult of explanation, on the seventh pair of nerves. The functions of the cerebrum, as manifested in the persistence of consciousness and the sense of pain, show that viburnum exerts at least no primary action upon the brain.

Fourth. A constant and first effect of haw is to paralyze the vasomotor nerves, with consequent dilatation of the bloodvessels; the capillaries of the rabbit's ears become distended with blood. At the same time, in warm-blooded animals, the action of the heart becomes very rapid and feeble, and, later on, the vessels of the periphery become so small that even large vessels in the ear of the rabbit are

[1] These experiments are given in detail in the Transactions of the North Carolina Medical Society, 1888.

almost unapparent to the eye. Coincidently the surface-temperature falls very low. The diminution in the size of the vessels seems attributable to diminished volume of the circulating fluid, and not to contraction of the muscular walls of the vessels through increased vigor.

In cold-blooded animals the action of haw on the heart differs somewhat from its effect upon warm-blooded animals. Instead of growing more rapid, the heart becomes gradually slower and slower, but the similarity of action is marked in the disturbed rhythm and constantly increased feebleness of the heart's pulsations. In one of the experiments the normal action of the rabbit's heart raised the column of mercury in the manometer connected with the carotid artery fully five inches, but when the animal was fully under the influence of the medicament the pressure fell so low as to exert no influence on the mercury: while a comparison of the blood-pressure taken with a mercurial kymograph from the carotid of rabbits before the administration of the haw and after the animals come fully under its influence, show conclusively the fall of the blood-pressure under the action of the drug. In both warm-blooded and cold-blooded animals, after lethal doses of haw, paralysis of the heart precedes cessation of the respiration. Post-mortem investigation shows the right ventricle and vena cavæ distended with soft coagula, and the left ventricle also contains some soft clots; the lungs are congested, and all the post-mortem indications are that the heart is arrested in diastole from paralysis of its vasomotor ganglia.

From the foregoing summary it seems evident that viburnum paralyzes both the centers of voluntary motion and the reflex functions of the spinal cord.

From this knowledge of the physiologic action of haw we naturally conclude it is destined to become an approved remedy in all diseases characterized by increased excitability of the motor centers. An especial recommendation for viburnum in these cases is that it paralyzes the motor centers without impairing sensation or consciousness.

In the convulsions of hysteria, whether involuntary or artificially induced, in hystero-epilepsy, in *petit mal*, in the true epileptic seizure, and in various localized spasmodic troubles, we may expect much good from haw in the prevention of recurring paroxysms.

In cases of paralysis agitans the writer has witnessed marked diminution in the tremor, and has added much to the comfort of the patient by the prolonged use of moderate doses of this remedy. In idiopathic dysmenorrhea (?)—by which term I prefer to designate all painful menstruation unaccompanied by organic lesion or displacement—haw is exceedingly useful. This form of dysmenorrhea is most frequent in subjects of the hysterical temperament, or in women in whom, either by reason of faulty development or the neglect of hygienic laws, the nervous system has become predominant. Idiopathic dysmenorrhea is characterized not only by the absence of organic defect, but also by acuteness of pain as well as by irregularity, the suffering being much worse during some periods than in others; the condition is by some teachers designated ovarian, by others spasmodic dysmenorrhea. In this form of painful menstruation the viburnum will prove of the greatest utility if it be administered for a few days prior to and during the time of the menstrual epoch; and even in painful menstruation due to obstruction, while we could not expect this agent to prove curative, it will certainly lessen the violence and frequency of the colicky, bearing-down pains, and is open to none of the objections that apply to the use of opiates.

In this connection it may not be out of place to refer to the statement of Dr. Edward Jenks, who declares that haw is only useful in those cases of dysmenorrhea associated with menorrhagia. This statement, in the writer's opinion, is not absolutely correct, but there certainly are cases of dysmenorrhea associated with menorrhagia in which ovarian influences play a potent part as etiologic factors in the production both of the increased and painful flow that are much benefited by the viburnum.

That there is a form of dysmenorrhea produced by ovarian influences is beyond question. Ovarian irritation is common at the age of puberty; is frequent in sterile marriages; is often caused by sexual excesses, and is common among prostitutes or when great disparity exists between the ages of husband and wife; and, lastly, like the final flickerings of the candle burned into the socket, ovarian irritation is one of the most constant phenomena of the menopause, and whenever found associated with menorrhagia we can safely regard it as one of the causes of the increased flow, and may confidently expect to do much for its relief by the administration of the viburnum. On the other hand, in menorrhagia due to congestion of the portal circulation, subinvolution of the uterus, metritis, lacerations and erosions of the cervix, and when fibroid tumors exist, haw not only exerts no beneficial effect, but may prove positively injurious.

In the prevention of abortion haw has proved itself preëminently useful, and with a clear knowledge of its physiologic action it stands upon a firm basis before the profession as the very best agent known for the purpose named. Labor, whether at full term or occurring prematurely, is nothing more or less than a reflex action, and haw, from its power to lower the irritability of the motor centers through

all grades of debility, from the slightest paresis to the most profound paralysis, commends itself above all others as the remedy in threatened abortion.

Of course, if the ovum is detached from its uterine connections, in part or entirely, we could not expect, nor would we desire, its retention, but in cases the result of emotional causes, or of other causes acting exclusively through a nervous agency, when there are simple expulsive pains without much hemorrhage, even though there may have already resulted considerable dilatation of the os uteri, the viburnum will almost surely prevent abortion if it be faithfully pushed. Viburnum has proved of the greatest use in the writer's hands in cases in which women have contracted the habit of aborting. In these cases the fluid extract in dram doses, or preferably a decoction prepared from the fresh bark of the root, in half-ounce doses, should be administered three or four times daily from the time pregnancy is suspected till several weeks have elapsed after the usual period of aborting. One word of caution is necessary as to the use of haw in threatened abortion. In cases characterized by much hemorrhage, the vitality of the embryo is probably lost, and it is hardly worth one's while to try to save it, and in these cases haw may prove a dangerous remedy. The bleeding is caused by a detachment of the placenta; the only means of checking the hemorrhage is the closing of the torn uterine sinuses by the contraction of the uterus, and haw by its paralyzant action may effectually prevent this contraction, and thus add greatly to the danger of death from hemorrhage. Or again, haw, by controlling the expulsive efforts of the womb, may cause the retention of a decomposing mass, and thus favor the production of septicemia. A large number of pregnant women suffer with what the writer is in the habit of styling irritable uterus. At any time during pregnancy, but especially during the later months, the womb may become fretful under its burden, and then occur frequent slight contractions, which annoy the woman and keep up tenderness and a sore feeling in the lower part of the abdomen. These cases are speedily relieved by moderate doses of viburnum. In the false pains that often harass a woman for days before the onset of labor, and in the after-pains of confinement, haw will often relieve.

The preparations of haw that I have used are the solid extract, in doses of from five to ten grains; the fluid extract, in doses varying from a dram to half an ounce, or, what is far preferable, a decoction prepared as follows, viz.: Four ounces of the bark of the fresh root are added to three pints of cold water in a porcelain vessel, and the whole boiled gently till only a quart of fluid remains. The fluid portion is now strained away, and the juices remaining in the bark are extracted under pressure and added to the decoction. Of this the dose is from one-half to one ounce, repeated in accordance with the demands of the case and the resulting effect.

A PRACTICAL TEST FOR AIR-IMPURITY.[1]

By HARRY H. BOOM, M.D.,
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Hygienists and chemists tell us that pure atmospheric air contains about four parts or volumes of carbonic oxide (CO_2) in every ten thousand parts of air. When symptoms of discomfort or disease result from breathing the air of inhabited, poorly ventilated rooms, such symptoms are due principally to the presence of impurities given off in respiration. It has been authoritatively stated, that, as such respiratory impurities are given off to the air they are mixed with a fixed quantity of carbonic oxide; in other words, with each expiration of the individual there is exhaled carbonic oxide, respiratory impurities, mostly organic in character, vapor of water, and other materials.

Although doubted by some observers, the view is still held by most sanitarians, that by estimating the amount of carbonic oxide in habitable rooms we may obtain an approximate measure of respiratory impurities present. Dr. de Chaumont tells us that when the air has added to it respiratory impurities in amount represented by two parts of carbonic oxide in the ten thousand, in addition to the four parts of carbonic oxide existing naturally in air, such air does not differ materially from pure outside air in its effect upon health. When, however, the proportion of carbonic oxide, and its accompanying impurities, exceed six parts or volumes in ten thousand parts of air in the room, the health of the individual suffers. This, then, is the permissible limit of respiratory impurities.

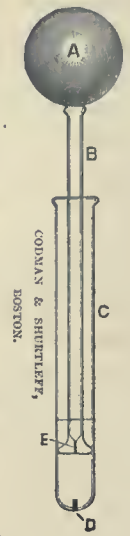
If we pass a stream of carbonic oxide gas through lime-water, a precipitation of carbonate of lime takes place, causing the lime-water to become turbid. This fact is applied by Dr. Angus Smith in the "household" and the "minimetric" methods of air-testing described by him. Recently, Professor Wolpert, a noted German meteorologist, has devised an instrument that he calls an "air-tester."

Dr. S. W. Abbott describes this instrument in the *Boston Medical and Surgical Journal*.[2] It consists of a simple rubber bulb (A) of a capacity of twenty-eight cubic centimeters, a glass outlet-tube (B) with a constriction near its extremity (E). A glass test-tube twelve centimeters in length (C) and two millimeters in diameter, has a horizontal mark near the bottom, indicating the point to which it must be

[1] Read before the Philadelphia Medico-Legal Society, January 26, 1892.

[2] See Rohé. Text-book of Hygiene. Second Edition.

filled with perfectly clear saturated lime-water to contain three cubic centimeters. The bottom of the test-tube is whitened and has a black mark stamped upon it (D).



In order to use Wolpert's "air-tester," pour clear saturated lime-water into the test-tube until it reaches the horizontal mark. The glass outlet-tube attached to the rubber bulb is inserted nearly to the bottom of the test-tube and below the surface of the lime-water. The rubber bulb is compressed firmly and twenty-eight cubic centimeters of air are forced through the lime-water. Without relaxing the compression of the rubber bulb, withdraw the outlet-tube from the lime-water and then allow the bulb to refill with the air of the room. Again insert the outlet-tube in the lime-water and compress the bulb, as before. Continue forcing air through the lime-water in this manner until the carbonic oxide present in the air has rendered the lime-water so turbid that when we look downward through the lime-water, we can no longer distinguish the black mark (D) on the bottom of the test-tube. If this obscuration is effected by one bulbful of air (twenty-eight cubic centimeters) carbonic oxide is present in the proportion of 200 parts to 10,000 parts of air. If it requires two bulbfuls of air, carbonic oxide is present in the proportion of 100 parts. If thirty-three or thirty-four bulbfuls of air are required to render the lime-water turbid, obscuring the black mark, carbonic oxide is present only to the permissible limit of six parts in ten thousand.

As this method of air examination appeared so practical and required so few appliances, it seemed worthy of attention. On application at the stores of our city, however, the instrument could not be obtained. It was found impossible, without considerable cost, to obtain a rubber bulb of exactly twenty-eight cubic centimeters capacity. Furthermore, after such a bulb was made, even though the utmost care was used in compressing it, all the air which it contained was not expelled, so that a compression of the bulb did not cause quite twenty-eight cubic centimeters of air to pass through the lime-water. Another objection was that as the bulb had but one opening for the admission of air, that through the outlet-tube, lime-water would be sucked up into the outlet-tube and bulb if the compression of the bulb was relaxed in the slightest degree before the outlet-tube was withdrawn from the lime-water. When lime-water gained entrance to the rubber bulb in this manner, part of it remained in the bulb, thus lessening the quantity of lime-water operated upon, and part of the lime-water sucked up returned to the test-tube, carrying with it powdered rubber, which caused a turbidity in excess of that produced by the carbonic oxide. The required diameter of the test-tube, two millimeters, was so small as to constitute a decided objection.

For all these reasons I have been led to propose a modification of the "air-tester" of Professor Wolpert, and of the manner of using the "air-tester." It is as follows:

1. Select a test-tube of *any* size and make a horizontal mark upon its side at *any* point.

2. Take a rubber bulb having one valve and to the *unvalved* extremity bind a glass tube, long enough to reach to the bottom of the test-tube selected, and our apparatus is complete. For the rubber bulb we may use the hand bulb of a spray-producing apparatus.

We must now "standardize" our apparatus. To do this we carry the apparatus to a place the air of which we know to be pure, or the air of which contains four parts of carbonic oxide in ten thousand parts of air. Fill the test-tube with clear, saturated lime-water, up to the horizontal mark made upon the side of the tube. Insert the outlet-tube, attached to the rubber bulb, below the surface of the lime-water in the test-tube, and compress the bulb; without withdrawing the outlet-tube from the lime-water, allow the bulb to refill slowly, through the valved opening, with the air of the room. Continue compressing the bulb and thus forcing air through the lime-water, until an ink line, or mark, made upon a white card can no longer be distinguished when the card is held against the bottom of the test-tube and we look downward through the turbid lime-water. Multiply, now, the number of times we have compressed the rubber bulb by four and write the product plainly upon the apparatus. Our instrument is now "standardized" and is ready for use. To make use of it, we put it in the hands of the nurse or attendant, telling her to test the air of the sick-room at stated intervals. She is to divide

the number of bulbfuls of air of the room necessary to render the lime-water turbid (obscure an ink line on a white surface) into the number written upon the apparatus, and when the quotient exceeds six the quantity of respiratory impurities, as measured by carbonic oxide in the air of the room, has passed the permissible limit, and the air in the room must be changed more rapidly.

When we standardize our instrument we write the product of the number of bulbfuls of air multiplied by four upon our apparatus to avoid giving the nurse the necessity for the following calculation:

The quantity of air of the sick-room required to produce turbidity in lime-water is to the quantity (or number of bulbfuls) of pure air required to produce turbidity in lime-water, as the quantity of carbonic oxide present in pure air (four parts) is to x, or the quantity of carbonic oxide in the air of the sick-room. Now, if on standardizing our apparatus it required twenty bulbfuls of pure air to cause turbidity of the lime-water, and in the sick-room ten bulbfuls of air caused the same amount of turbidity in lime-water, then—

Air of room.		Pure air.		Parts CO_2.	
10	:	20	::	4	: $x = 8$ parts CO_2 in 10,000.

Then, if the product of the number of bulbfuls of pure air multiplied by four, be written upon the apparatus, the only calculation the nurse will be called upon to perform is that of dividing the number of times she compresses the bulb into the number written upon the apparatus.

The instrument may be standardized in other than pure air, provided that by some reliable test, as Pettenkofer's, we determine exactly how many parts of carbonic oxide are present. If our apparatus be standardized with air at a temperature of 68° to 70° F., it will render unnecessary any correction for differences in temperature, as air in rooms usually has this temperature.

As an example of the usefulness of this little instrument the following is cited:

An instrument marked 80 was given to a nurse attending a case of typhoid fever, and upon the clinical chart she notes:

2 P.M. Ten compressions, or 8 parts CO_2 [$80 \div 10 = 8$ CO_2]. More fresh air admitted.

4 P.M. Fifteen compressions, or 5+ parts CO_2.

6 P.M. Twelve compressions, or 6.7 parts CO_2. More fresh air admitted to the room.

The time required for each examination was but from three to five minutes. After each examination the test-tube should be washed with vinegar to remove any carbonate of lime remaining upon the bottom or sides of the tube, and then well rinsed with water.

In closing this subject, I would give warning not to trust to the sense of smell for judging the state of purity of air in a room. Many poisonous exhalations have no smell, and, also, as the sense of smell is soon blunted, nurses are often unaware of the extremely unhealthy condition of the air of a room in which they remain for many hours. On first entering a room we may find the air quite offensive, yet before we leave the room, after a short call, our sense of smell is so blunted that we no longer perceive any difference between the air of the room and the pure external air. For this reason I would urge the necessity of frequently repeated examinations of the air of rooms, especially of rooms occupied by the sick.

ASCOCOCCUS GANGRENOSUS: REPORT OF A CASE OF GANGRENE, WITH BACTERIOLOGIC INVESTIGATION.[1]

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Case I.—Mr. B., a colored man, seventy-two years of age, whose general health had always been good, and whose habits had been unexceptional, had never suffered from any prolonged illness and there was no history of inebriety or venereal disease. On November 27th, 1890, the patient complained of intense pain in the great toe of his right foot, associated with a feeling of coldness and slight discoloration, the skin having a pinkish hue. In the course of a few days the discoloration became more intense, and on the outer side near the extremity of the nail, intensely black, shading from black to purple, from purple to reddish pink, the latter color extending up some distance on the foot. About the middle of December, Dr. Hearn saw the case and pronounced it one of senile gangrene; it had then developed an intensely penetrating and horrible odor, that could not be suppressed by the most active deodorants. The line of gangrene progressed slowly until December 23d, when it reached a line extending around the foot, just posteriorly to the tarso-metatarsal articulation on the upper surface, and involving the entire plantar surface of the foot, extending barely as far back as the heel. The line of demarcation developed and all further progress for the time seemed arrested. The pain was still excruciating and the disagreeable odor had not diminished. No constant record of temperature was kept, but there did not seem to be any very marked elevation; upon several occasions it ran as high as 101⅘°; there were no rigors and no evidence of septic absorption. The patient's general condition was very good; intense pain had kept him awake and annoyed him a great deal, but he did not seem to have lost strength. On December 27th, it was decided to amputate the limb. On account

[1] This report represents a part of the Thesis that secured THE MEDICAL NEWS Prize, and is one of a series of observations and experiments carried on in the Laboratory of Pathology under the supervision of Dr. Coplin, Demonstrator of Pathology and Lecturer on Hygiene.

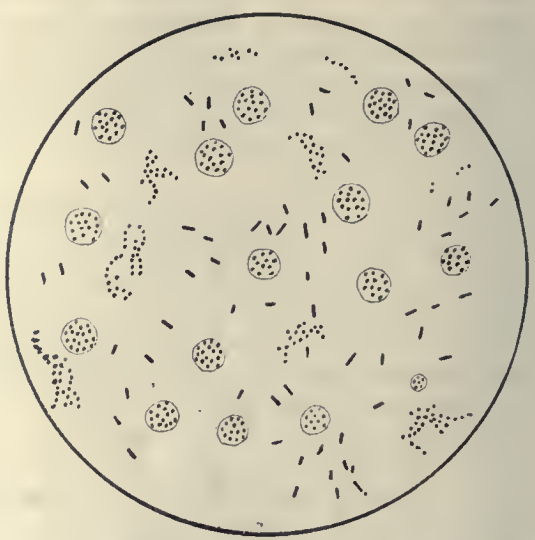
of his age, it was thought that the shock would be less if the operation could be rendered bloodless by the use of Esmarch's bandage. The operation was done under the strictest antiseptic precautions. The line of amputation was such as to divide the tibia just below the tubercle. The larger bloodvessels were remarkably calcareous, and held the ligatures very poorly. The patient bore the anesthetic (ether) very well indeed; his pulse seemed stronger and his color better after the operation than it had been before. The flaps did not retract as far as they should have done, and did not seem to regain their color, looked white, and the elasticity of the skin seemed diminished. The limb was enveloped in cotton and surrounded by hot-water bags, these being renewed from time to time in order to insure the application of abundant warmth. The pain almost entirely disappeared; prior to the operation, he had been taking from a grain and a half to three grains of morphine per diem; he now passed a quiet night and enjoyed some sleep, although there had been administered but a quarter of a grain of morphine immediately after the operation, which was at 3 P.M. On the following day the dressings were removed and found but slightly blood-stained; the flaps did not seem to have regained their color, and there was no evidence of any inflammation along or near the point of suturing. The wound was washed with a one to one thousand bichloride of mercury solution and again dressed in the bichloride gauze; hot water was reapplied as had been done in the first dressing. The patient's general condition seemed very good indeed; he had no pain and felt no particular discomfort in the limb; he was taking nine grains of quinine each day, supplemented by the very best food that could be obtained, and the administration of three whiskey punches in the twenty-four hours. He passed a very quiet night, and on the following day—the third day after the operation—seemed to be feeling very well; there was no perceptible weakness, and the wound was again dressed as before. On the following day the pain had returned with renewed intensity, and the wound again gave off the penetrating, peculiar odor so characteristic of senile gangrene. At this dressing the entire flaps were gangrenous, the intense black fading off through several successive changes in hue, and again extending in irregular lines over the external and upper surface of the knee-joint. The gangrenous wound was thoroughly washed out with peroxide of hydrogen in the hope of neutralizing the odor, followed by washing with bichloride of mercury solution and the reapplication of antiseptic gauze. On the fifth, sixth, seventh, and eighth days his condition remained about the same and the gangrene did not seem to extend. On the ninth day after the operation a bedsore had developed on one hip; this emitted the same fetid odor and was the seat of the same intense pain that had been present in the limb.

The patient was perceptibly weaker and sinking fast; although taking from three to five grains of morphine a day, his suffering was terrible; he no longer took nourishment, could not sleep; chills, at first slight, afterward more severe, were associated with and followed by intense pain and fever. The gangrenous process in the leg stopped at the knee-joint and did not seem to have any tendency to progress further. The bedsore increased in size until, on the twelfth day after the operation, it was as large as a dinner-plate, its surface covered by a black sloughing mass. On the thirteenth day his consciousness for the first time gave way, and on the morning of the fourteenth day he died.

It was impossible to obtain the amputated limb, as he had expressed a desire that it be buried; permission, however, was obtained to remove several small pieces of the sloughing tissue, as well as some of the bloodvessels, nerves, and pieces of muscle. The bloodvessels were intensely calcareous, the anterior and posterior tibials being the seat of the most marked atheroma and their lumen so diminished as to barely permit of the introduction of the smallest surgical needle.

The specimens of gangrenous tissue referred to were brought to the laboratory and the following experiments were made:

Tubes A, B, C, D, and E were inoculated on December 27th, and in twenty-four hours, at the temperature of the room, which averaged 70° F.,



Dry gangrene. Ascococci, micrococci, and bacilli—from agar-agar culture. Beck's $\frac{1}{12}$ homogeneous immersion, Oc. 2. (Camera lucida drawing.)

developed a considerable growth, which was of ashen-gray color, opaque, and glistening. It penetrated the surface deeply and rapidly in dense clouds. It did not liquefy the agar. A horrible odor emanated from the tubes, closely resembling that which is so characteristic of senile gangrene.

Slides from these cultures showed cocci that somewhat resembled streptococci, but were considerably smaller than streptococci pyogenes. There were also present some few small bacilli. The cocci

stained but poorly with Ziehl-Neelsen's carbol-fuchsin solution, but evinced intense affinity for Weigert-Ehrlich's methyl-violet aniline stain. These spreads were all treated by Gram's method and mounted in Canada balsam.

The cultures were carried on through several generations and cover-glass impressions made, to determine the class to which they belonged. They were stained with methyl-violet aniline and mounted as previously stated. A microscopic examination revealed what was apparently a hyaline circular capsule containing many cocci, a number of which were stained of an intense blue color. No bacilli were perceived. There were other cocci present, arranged as monococci and diplococci.

On February 16th, at 4 P.M., a culture of these microbes was injected into the subcutaneous tissue of the thigh of a guinea-pig. On the following morning a small and intensely black spot, about the size of a split-pea, had formed, with a line of demarcation sharply defined. The gangrenous area was somewhat depressed, dry, and very hard. The animal was not active as usual, did not use the leg in locomotion, but held it close to the side of the body. It still continued to take food, although the amount, as compared with the quantity it usually devoured, was extremely small. The gangrenous area increased gradually day by day, and the animal absolutely lost the use of the limb. Attempts to move it caused great suffering, crying, and struggling. On the 20th a small circumscribed gangrenous area upon the abdomen, midway between the xiphoid appendix and pubes, was observed, and connecting it with the gangrenous process in the thigh, a round indurated band of tissue, apparently about one-fourth of an inch in diameter. After the 23d the pig rapidly declined, the prostration became extreme, and it did not appear to notice food placed in its cage, nor did it drink water. From this time it passed into a comatose condition. At intervals of about half an hour it would for a minute or two rouse itself and endeavor to stand, only to fall over on its side, all the while uttering the most plaintive cries. This condition continued, the stupor becoming more profound, and the intervals between its attempts to stand and the paroxysms of crying more prolonged. Its head sank and rested upon the bottom of the cage and its hair appeared to stand on end. While observing it on the evening of the 24th, at about 4.30 o'clock, it suddenly raised itself upon its forelegs, swayed from side to side several times, fell over, and expired.

After a careful dissection, the necropsy showed that the muscles of the abdomen, immediately subjacent to the gangrenous tissues alluded to, were becoming involved, being of a dull slate-color, and more easily broken down than healthy muscles. The same odor that was noticed in detailing the history of the case was present, although not so marked.

Cover-glass impressions of the blood contained in the heart, show by the staining of aniline methyl-violet, by Gram's method, first treating with acetic acid, numerous cocci that arrange themselves as monococci, diplococci, and tetracocci. Tubes were also inoculated from this blood, from which developed a mixed growth of bacilli and cocci, the former in by far the greater number. The macroscopic appearance of the liver seemed to indicate the existence of metastatic abscess, and as soon as the liver attains the required consistency, it will be cut and microscopic examination made.

One of the peculiar features of the case of the old man with senile gangrene was the apparent limitation of the gangrenous process, which extended so far, and then the line of demarcation formed after the amputation and reëstablishment of the gangrene in the stump; it will be remembered that a second necrotic area formed upon the buttocks, which also became circumscribed. Now comparing the symptoms, etc., of this case with that of the guinea-pig, in which gangrene was produced by the subcutaneous injection of microörganisms cultivated from pieces of tissue taken from the amputated limb, one cannot fail to recognize the similarity or identity of the two conditions.

In considering this case, and bearing in mind the guinea-pig experiment, the writer concludes that the immediate cause of death in such cases is the entrance into the circulation of these microbes, their proliferation and the production of ptomaïnes, and septicemia. That the flaps after amputation should have become gangrenous is not surprising, and, in my opinion, cannot be attributed wholly or directly to the diseased condition of the arteries. I believe that the physiologic resistance of the cells, supplied with but a small quantity of blood, was considerably diminished, and that the roughened intima of the bloodvessels furnished a condition preëminently suited for the mural implantation of the microbes contained in the circulating blood; that the microbes were either present or effected an entrance into the blood at the time of the operation, and that they subsequently lodged in the flaps and proceeded to exert upon the tissues their specific pathogenic action.

The only explanation that I can offer as to why the gangrene did not manifest itself earlier after the amputation, is that through the agency of the bichloride, the organisms were prevented from localizing themselves, but that so soon as union had commenced, and the inhibiting and destroying influence of the antiseptic was removed, they established themselves in this *locus minoris resistentia*, and from

this point of vantage so thoroughly and rapidly invaded the tissues, that nothing could stay their progress.

The application of Esmarch's bandage may have also had an important rôle in the production of gangrene in the stump. The diseased condition of the arteries rendering them exceedingly brittle, portions may have broken down and the calcareous particles have been washed into the general circulation.

CLINICAL MEMORANDA.

A NOTE ON ASTHENOPIA AND INTRA-NASAL DISEASE.

BY G. E. DE SCHWEINITZ, M.D.,
PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC; OPHTHALMIC SURGEON TO THE PHILADELPHIA AND CHILDREN'S HOSPITALS.

IT is well established that a large number of ocular disorders (blepharitis, chronic hyperemia of the conjunctiva, phlyctenular kerato-conjunctivitis, and dacryocystitis) may have their origin in intra-nasal disease. Less frequently there is an association between atrophic conditions of the nasal mucous membrane and degenerative changes in the optic nerve, and quite a number of observations have been recorded in which a series of symptoms referred to the eyes, and in which the eyes themselves, in so far as the balance of the external ocular muscles and the refractive condition are concerned, were abnormal, nevertheless depended upon naso-pharyngeal disease. The cases which follow belong to the last class, and illustrate one or two instructive points:

CASE I.—Miss M., aged nineteen, unmarried, reported for treatment October 23, 1890, with the following statement: She had worn glasses since she was eight years of age, in the hope of obtaining relief for almost constant headache. Frequent changes in the correction had been made, but no glass had ever been prescribed that gave her much relief. There were stubborn asthenopia and post-ocular and supra-orbital pain, aggravated by exposure to sunlight, and changed into an explosion of violent general head-pain on the slightest use of her eyes. Headache on rising was usually present. The family history was good, and her general health was perfect. The ophthalmoscope revealed on each side an oval, over-capillary optic disc. There was slight absorption of the retinal pigmented epithelium and some exposure of the larger vessels of the choroid. Glistening reflexes played through each macular region. After the use of atropine, the refractive error was found to be the following:

O. D. + sph. 1.50 D. ⌒ + cyl. 0.62 D. axis V = $\frac{6}{6}$.
O. S. + sph. 2.25 D. ⌒ + cyl. 0.62 D. axis 75 = $\frac{6}{6}$.

The muscular balance was as follows: Esophoria, 3°; exophoria in accommodation, 3°; no manifest hyperphoria. Practically no improvement took place, in spite of all reasonable treatment.

Attracted by the persistent morning headache and a slightly nasal voice, an examination of the posterior pharynx was made, revealing the evidences of some post-nasal catarrh. The patient was then referred to Dr. J. Solis-Cohen, who reported as follows: "There is chronic suppurative disease of the frontal sinus and ethmoidal cells, with consequent chronic inflammation of the mucous surfaces over which the discharges trickle and become adherent. The treatment will require several months, but will be very satisfactory in its results."

Dr. Cohen's prophecy was thoroughly fulfilled. At the end of a month she reported herself much better. At her last visit, December 10, 1891, or more than a year after her original application for treatment, her vision had risen to $\frac{6}{5}$, the over-capillarity of the optic disc had subsided, and to use her own words, "I am practically without headache and have never known so happy a year."

CASE II.—Miss B., aged thirty, unmarried, reported for treatment May 20, 1891, and gave the following history: As a school-girl she suffered much with her eyes and with headache, and she was ordered glasses, but without much relief. She continued to receive ocular treatment for a number of years, consulting several surgeons, but experienced little relief and no lasting benefit. Her complaint was as follows: Much pain in the eyes, across the brows and directly in the nose; stubborn asthenopia, so that no work requiring the use of the eyes at close range could be performed for more than a few minutes at a time without bringing on violent pain, neuralgic in type. She was a slender woman of the neurasthenic type, but without disease to which a name could be given. Not exactly hysterical, she had become depressed by her long debarment from reasonable use of her eyes, and had undergone a somewhat prolonged "rest-cure." She was wearing the following combination:

O. D. + sph. 3.25 D. ⌒ + cyl. 0.62 D. axis V = $\frac{6}{6}$.
O. S. + sph. 2.75 D. ⌒ + cyl. 0.62 D. axis V = $\frac{6}{6}$.

Through these glasses there was esophoria of 4° for the distant point, and about the same amount in accommodation. At one time she had worn weak prisms for hyperphoria without benefit. At the time of the examination no hyperphoria could be demonstrated. There were no abnormalities in the eyeground other than those common to hypermetropic eyes.

Attracted by the situation of the pain, and by the fact, previously unmentioned, that the asthenopia and also the pain were liable to be present most severely in the early morning hours, or, at all events, after resting, an examination of the nasal regions was made, and sufficient abnormality to justify special treatment was evident. She was referred to Dr. Ralph W. Seiss, who reported as follows: "There is a distinct tender spot over the right antrum; the septum is much engorged, with a myxomatous and hypersensitive spot high up on the right side. The turbinals are somewhat vaso-paretic (causing occasional stenosis) and infiltrated. The pharynx and larynx show moderate secondary changes. I believe that a fine cautery point to the septum would give considerable relief, and free antral drainage (by removing stenosis about meatus) might give very decided results. The patient volunteered that my manipulations—pressure and cocaine—have lessened the pain temporarily."

After a week's nasal treatment the patient acknowledged distinct improvement. From time to time reports came from this patient, always of a favorable character, and at her last visit, December 26, 1891, she was improved in every way. The neuralgia was practically gone, or, to use her own expression, "was an unusual occurrence." The eye-endurance was still limited, but reading or similar occupation could be maintained for a couple of hours without inconvenience.

Case III.—Mr. E. W., aged thirty-seven, married, reported for treatment December 20, 1890, and gave the following history: For some years he has experienced pain above the eyes and in the occiput, aggravated by reading or similar use of the eyes. The ocular pain is apt to be worse in the morning, and the use of his eyes has been greatly abridged, owing to the symptoms that have just been described, and in spite of the use of glasses. The patient was in good general health, and with the exception of the use of tobacco, had no bad habits. In each eye there was an oval, rather pallid optic disc, unduly full retinal veins, and general woolliness of the choroid. After cumulative instillations of homatropine the refractive error was found to be

O. D. + sph. 0.50 D. ⌒ + cyl. 0.75 D. axis V = $\frac{6}{6}$.
O. S. + sph. 0.50 D. ⌒ + cyl. 0.62 D. axis V = $\frac{6}{6}$.

There was exophoria of 5° degrees in accommodation; no other disturbance of the muscular balance.

At first the use of these glasses afforded some relief, chiefly in the amelioration of the occipital pain; later, this, as well as the ocular pain and asthenopia, returned. After an examination of the naso-pharyngeal region, the patient was referred to Dr. Ralph W. Seiss for special treatment. The following is his report: "There is rhino-tracheitis of average type, with the following peculiar features: The capillary circulation is markedly engorged (deep-red mottling without swelling); the turbinals are purple; the lateral areas of the pharynx are very much engorged, and the larynx so much so that the true and false cords are of about the same tint. There is probably congestion of the lining membrane of the sphenoid sinus."

Unfortunately the patient did not attend with great regularity, but after having paid Dr. Seiss three visits, and having received appropriate treatment, he was so much improved that he doubted the necessity of further attendance. The fact that he has not reported makes it seem likely that his relief has been permanent.

It is evident that these cases do not belong to the class of the ordinary nasal headaches which are so common in catarrhal patients. They are further interesting because in each instance the refractive error and the faulty muscular balance were of such a character that the symptoms of which the patients complained would naturally be ascribed to these anomalies; and they are finally worthy of note because the patients were, to a great extent, unconscious of, or at least indifferent to, very serious and decided lesions in the naso-pharyngeal region. The definite relationship of the nasal and ocular difficulties in these cases seems well established, and it is evident that the treatment of each region had its special value in bringing about the cure. It is also plain that the careful examination and treatment of the eyes were not alone sufficient to alleviate the asthenopia, headache, and ocular pain which, although they seem in a large measure to have been dependent upon intranasal disease, were none the less provoked by the use of the eyes, and on this account the real cause of the difficulty might readily have escaped attention.

THE REMOVAL OF ADENOID GROWTHS FROM THE VAULT OF THE PHARYNX.[1]

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There seems to be such diversity of opinion amongst rhinologists as to the best way of removing adenoid tissue from the vault of the pharynx, that I shall endeavor in this article to emphasize the advantages of one particular instrument as compared with others, and to attract the attention of such as are unfamiliar with its use by tracing the steps of the operation necessary for its successful completion.

The instrument is one that was devised by Dr. Gradle, of Chicago, and given to the profession some two years ago; it is known as the Gradle forceps. I will not enter into a minute description of the instrument, but think on inspection some of its claims for consideration will be apparent. I base my conclusions on one group of twenty-nine cases upon which I have operated during the past year, at the Manhattan Eye and Ear Hospital. As most of the subjects for operation are children under the age of twelve years, it seems to me absolutely necessary, for a complete removal of these growths at one time, that the patients should be etherized to the extent of abolishing the reflexes. It hardly seems requisite to enter a plea here for the use of general anesthesia, as who amongst us has not seen the terror depicted on the faces of our little patients when brought back for a second introduction of the forceps, when only cocaine had been previously employed. Certainly the time involved—from ten to twenty minutes—in administering ether and completing the operation is well spent, when one considers that henceforth, so far as that condition is concerned, one will not again have to operate on that child. The objection most frequently urged against general anesthesia in these cases, is the possibility of asphyxiation from blood or vomited matter finding its way into the larynx. This bugbear appears to have been given too great prominence, as in an experience of at least one hundred and fifty cases I have never seen the slightest inconvenience resulting. It should be remembered that by the time the mouth-gag has been adjusted and the usual digital examination made to locate the mass—meanwhile the patient inhaling pure air—we have only the primary stage of anesthesia to deal with. Such being the case, any substance is much more apt to find its way into the stomach than into the windpipe. In addition to this, the patient being in the dorsal position, with head extended and brought well over the end of the table, but little danger or difficulty will be encountered.

In reference to the location of adenoid growths occur-

[1] Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, January 27, 1892.

ring in the naso-pharynx of children, it appears to me that one is likely to get an erroneous impression from the text-books and special articles on that subject. Especially is this true when the symptom of mouth-breathing is not decidedly marked or exaggerated. On this account, having swept the choanæ with the forefinger and thus discovered their patency, one may be inclined to doubt the original diagnosis. Experience leads me to believe that more than 90 per cent. of the well-defined groups of adenoid tissue in children lie at a considerable distance behind the free margin of the vomer, and not in close proximity to it.

Criticism has frequently been made by the casual observer that the antero-posterior dimensions of the Gradle instrument seem too large for introduction into a small child, and that the blades are too short to reach the vault of an adult pharynx. In explanation of the first objection, it is only required to add that the instrument is introduced sideways, closed, and under the guidance of the forefinger of the left hand, at the same time drawing forward the relaxed velum. The feasibility of reaching the most distant part of the adult vault is easily demonstrated on a skull. The blades having passed behind the velum and being allowed to open, will be found perfectly free and movable. The growth having been included and firm upward pressure being exerted, it is removed *en masse* by a closing and twisting movement of the handles. As in tonsillotomy, the more force and power brought to bear, the more complete the result. There is absolutely no danger of wounding the surrounding parts, by an operator who is familiar with their anatomy. The hemorrhage is fairly free for a moment, but ceases spontaneously. It is seldom necessary to reintroduce the forceps, and any remaining roughness may be smoothed down with the finger-nail. The patient is then rolled over, face downward, and such blood as may have accumulated in the mouth and nasal chambers is allowed to escape. By this time consciousness usually returns, and the patient is able to proceed homeward in the course of half an hour, with instructions to keep perfectly quiet for twenty-four hours. After-treatment in the way of sprays, etc., has been abandoned, as the children seem to do as well without it.

The action of the forceps is a combination of both the cutting and torsion methods. The greater proportion of the growth is cut through, and the remaining slight attachment twisted off. It scarcely seems essential to contrast the Gradle forceps with the numerous other instruments at our command, when we consider its simplicity and perfect adaptability to the purpose. Other devices seem clumsy or futile in comparison, when the number of introductions and small amounts of tissue removed each time are remembered. In making so sweeping an assertion as this, I feel sure of arousing the objection of a number of gentlemen who have found the Gottstein curette sufficient to meet their wants. Unquestionably the Gottstein is a most valuable instrument, and approaches the Gradle instrument more nearly in usefulness than any of the others. The latter, however, possesses a few minor advantages in addition that would seem to make it preferable, namely, as introduced, closed, it occupies far less space and is more readily directed to any portion of the cavity, finds its way more deeply into the base of the growths, and, what to my mind is very satisfactory, retains the extirpated mass in the grasp of the blades until withdrawn. This is not true of the Gottstein, the severed tissue generally being lost and swallowed by the patient. Although hemorrhage is usually unimportant in these cases, unless we have to do with a "bleeder," yet I have observed that it is always more profuse after the use of the Gottstein curette. My query then is: What is left to be desired in an instrument that removes so large a mass at one effort, with safety and rapidity?

In this collection of cases the age ranged from two years to twenty-four years. The symptoms were those commonly observed in obstructive nasal respiration: vacuous expression, mouth-breathing, restless sleep with snoring, impaired hearing and quality of voice, more or less irritative cough, and a generally anemic appearance. Of these twenty-nine cases of adenoids of the vault, twelve, or nearly one-half, were accompanied by hypertrophied tonsils, which were removed at the same sitting but previous to the performance of the adenotomy. The patients have recently been examined, and, without exception, the results have been very gratifying. The amelioration of symptoms was apparent within the first few days. In fact, the usual report of the parent has been, that "the child slept better on the first night after operation than it had done since first troubled with catarrh." It occasionally happens, however, that a week or ten days' time will be required to demonstrate any marked improvement. This, I presume, may be accounted for by the fact that in such cases the hypertrophied glandular tissue is distributed over a larger area, and the increased mechanical interference necessary for its removal causes a more marked inflammatory reaction.

MEDICAL PROGRESS.

Lateral Anastomosis for Carcinoma of the Bowel.—At a recent meeting of the Philadelphia County Medical Society, ASHTON reported the case of a woman, twenty-eight years old, who for three months presented failure in health and loss of weight, with paroxysms of abdominal and pelvic pain, preceded by abdominal distention. There was obstinate constipation; and nausea and vomiting set in. Celiotomy was performed, and a large carcinomatous mass was found involving the ileum, with glandular metastasis. The extent of disease was so great that resection seemed dangerous, and a simple lateral anastomosis was established. Solid rubber oval rings were employed, together with the right-angle continuous suture. Irrigation was omitted, and no provision for drainage was deemed necessary. The entire operation occupied twenty-five minutes. The patient recovered without complication. Three months after the operation the patient had gained thirty-five pounds in weight, and was in general much improved. Stress is laid upon the following points:

The necessity of frequently douching the seat of operation with warm sterilized water, to prevent the dangers of infection and shock.

Rapidity in operating is of great importance to insure success.

Early feeding by the mouth should be employed in all cases, especially in those already weak and exhausted.

This does not add to the dangers of leaking, as the parts are perfectly secure if proper rings and additional sutures are employed.

An important factor in causing subsequent closure of the anastomotic opening is direct union between the edges of the incision. This danger may be materially lessened by using a steel punch in making the opening, by stitching together the edges of the serous and mucous coats of the bowel, by placing the lateral sutures of the ring as close as possible to the margins of the incision, and lastly by making the anastomotic opening sufficiently long and of an oval shape.

Obstruction of the Bowel by a Gall-stone.—Bircher (*Correspond.-bl. f. Schweizer Aerzte*, 1892, No. 5, p. 142) has reported the case of a woman, sixty-two years of age, who for two years had complained of anorexia, digestive derangement, and constipation. Three or four years and one year previously, there had been attacks of severe cardialgia, after which the urine was deeply colored, but no jaundice appeared. When the patient came under observation there had been severe abdominal pains, followed by vomiting that soon became fecal. The abdomen was soft and retracted, but on deep manipulation a sense of resistance was evident in the right hypogastric region. Tenderness and spontaneous pain developed a little below the ileo-cecal region. Upon opening the abdomen, the intestines were found free but reddened; there were no evidences of peritonitis. Further examination disclosed the presence of a hard body occluding the lumen of the small intestine. In this situation a fecal odor was perceptible and the bowel appeared to be ulcerated. On opening the bowel a stone was found and removed, and the bowel was resected for a distance of almost eight inches, and was closed by three rows of sutures. The woman died in collapse ten hours after the operation. An autopsy was not permitted. The stone was pear-shaped, more than two and a half inches in its longest diameter, one and a quarter in its greatest thickness, and weighed eight hundred grains. It consisted of a nucleus of cholesterin and a cortex of lime-salts of bilirubin.

Cholecystenterostomy for Gall-stones.—Helferich (*Deutsche med. Wochenschr.*, 1892, No. 8, p. 157) reports the case of a man, thirty-seven years old, who had had repeated attacks of hepatic colic, attended with jaundice, and clearly dependent upon the presence of biliary calculi. Surgical interference was decided upon. An incision was made midway between the costal margin and the border of the enlarged liver, and extended vertically in the linea alba to the ensiform cartilage. The liver was pressed upward and backward from above by an assistant, and the gall-bladder exposed. This viscus was pear-shaped and moderately tense, but contained no calculi; it was adherent to the inferior surface of the liver. Calculi were palpable in the ductus choledochus. The relations of the parts rendered incision of the duct, with removal of the stones and subsequent suture, inadvisable, if not impossible. With a view of affording at least palliative relief, openings were with considerable difficulty made in the gall-bladder and the first part of the jejunum, and the corresponding edges approximated, leaving an orifice of communication of the thickness of a lead-pencil. The patient made a satisfactory recovery.

The Etiology of Epidemic Dysentery.—In evidence of the view that dysentery is not etiologically dependent upon any single specific factor, Maggiora (*Centralbl. für Bakteriol. u. Parasitenk.*, Bd. xi, No. 6 u. 7, p. 173) has reported the results of microscopic examination of the feces in twenty cases of dysentery, with bacteriologic examination in eleven cases, during an epidemic involving more than two thousand persons. There were three deaths among the number. In addition to red and white blood-corpuseles, intestinal epithelium, mucus, oil-globules, and particles of food, large numbers of microörganisms were found in the stools. The bacterium coli commune was found in large numbers in all cases. Proteus vulgaris was found in almost all cases in moderate numbers. In six cases the liquefying fluorescence-bacillus was found. Of a large number of examinations the ameba coli was found in but one. In another case the paramecium coli was present. In some cases staphylococci and the bacillus pyocyaneus were found.

Pernicious Anemia, Atrophy of the Gastric Mucous Membrane, and Degeneration of the Spinal Cord.—At a meeting of the Medical Society of Hamburg, Eisenlohr (*Münchener medicin. Wochenschr.*, 1892, No. 5, p. 79) reported the case of a man, sixty years of age, who for three months had complained of general weakness. Digestion was not deranged, but there were motor weakness of the extremities, a spastic-paretic gait, and incontinence of urine and of feces. Paraplegia soon appeared. Sensibility was unimpaired, though the patellar reflexes were absent. There were, besides, marked anemia, heart-murmurs, and poikilocytosis, but no hemorrhage. Temporary diarrhea occurred, but presented nothing unusual. The patient died of exhaustion. At the autopsy a high degree of atrophy of the glandular structure of the stomach and intestines was found. There was parenchymatous cloudiness of the heart-muscle. The liver responded to tests for ammonium sulphide. The posterior columns of the spinal cord were degenerated.

The Relation of the Knee-jerks to Super-venosity.—In a preliminary communication, Hughlings Jackson (*Brit. Med. Journ.*, No. 1624, p. 326) records having found an absence of the knee-jerks in some cases of pulmonary emphysema in which the aëration of the blood was greatly interfered with. To confirm the accuracy of the observation he suggests that the knee-jerks be tested before and after the administration of oxygen to cyanotic patients. "If super-venosity is a cause of loss of the knee-jerks, the fact may be important with regard to the apoplectic state, and possibly somewhat with regard also to post-epileptic coma."

Hysteria in a Girl of Thirteen.—At a meeting of the New York Neurological Society, Leszynsky presented a girl, thirteen years old, in whom for two and a half years, following a frightful dream, paroxysms of causeless laughter and weeping had occurred. In the preceding year, menstruation set in and convulsive

seizures appeared, usually aggravated at the menstrual periods. The girl had had attacks of motor aphasia and others of mutism lasting for a week or more. The convulsions lasted at some times for many minutes, and at others for hours. Hysterogenic zones appeared at various parts of the body. There were visual hallucinations and occasionally maniacal attacks and movements of rotation and of combined rotation and retropulsion. The visual fields had been contracted. There had been transient hemiplegia. The knee-jerks were preserved, but feeble. There was no history of onanism or of ovarian disease. The general health appeared good.

The Influence of Light upon the Growth of Bacteria.—In comparative observations made upon the influence of sunlight and electric light upon the growth of cultures of bacilli of typhoid fever, GEISLER (*Centralbl. f. Bakteriol. u. Parasitenk.*, 1892, xi, 6 u. 7, p. 161) found that there was no qualitative difference between the two, only a quantitative difference—that is, both forms of light exerted an inhibitory influence upon the growth of the organisms on gelatin; sunlight, however, in greater degree than electric light. Not only the light-rays and the chemical rays, but also the heat-rays, participated in this influence. All the rays, except the red, exerted a retarding influence on the growth of the bacilli, greater in degree in proportion to the index of refraction and inversely to the wave-length. The influence exerted by both sunlight and electric light depended not only upon a direct action upon the bacilli, but also upon changes set up in the culture-medium.

Tetany of Gastric Origin.—BOUVERET and DEVIC (*Revue de Médecine*, 1892, Nos. 1 and 2), conclude a lengthy paper, detailing a large number of observations, by expressing the opinion that the tetany that sometimes appears in individuals with dilatation of the stomach is particularly associated with a condition of permanent hypersecretion, which results in the development of a toxic agent, which, injected into lower animals, gives rise to symptoms of spasm or of paralysis. The toxic agent is considered to be a modification of syntonin, which can be extracted from the peptones of normal digestion by alcohol in the presence of free hydrochloric acid. In cases of permanent hypersecretion, especially when associated with gastric retention, alcohol must thus be strictly interdicted. When tetany has appeared, the indication is to evacuate and wash out the stomach.

Aneurism of the Heart.—At a meeting of the Royal Society of Physicians of Vienna, KUNDRAT (*Internationale klin. Rundschau*, No. 8, 1892, p. 315) presented the heart of a patient that during life had presented symptoms of myocarditis. The organ was enormously enlarged. The right ventricle was as large as a fist; the left ventricle as large as two fists, and adherent to the thickened pericardium. The surface of the organ presented three prominences, one of which, half as large as an apple, presented an orifice communicating with the left ventricle; the second was as large as a hen's egg and separated from the adjacent third only by a cicatrix. The primary process had been a myocarditis, as indicated by the multiplicity and contiguity of the lesions.

THERAPEUTIC NOTES.

The Treatment of Hemorrhoids.—At a meeting of the Medical Society of London, LAUDER BRUNTON (*Lancet*, No. 3576, p. 583) dwelt upon the influence of cold and over-eating in the development of hemorrhoids. Mercurials, followed by mild salines, are useful in preventing hepatic congestion. Aloes, in large doses, may conduce to the development of hemorrhoids by overstimulation of the muscular coats of the rectum. Small doses, on the contrary, exert a beneficial influence. Hepatic congestion due to cold may be relieved by the application of hot-water bags to the nape of the neck and over the liver. Patients subject to hemorrhoids should become accustomed to emptying the bowels at night, so as to secure rest in the recumbent posture. When there is much irritability at the anus it is preferable to use a soft sponge and water instead of paper more or less harsh. A pledget of animal wool dipped in hamamelis and introduced into the rectum will act as a mechanical support and as an astringent. In obstinate cases an anal pad may afford great relief.

For Pediculi Pubis.—The following ointment may be applied topically for the removal of pediculi pubis, without danger of salivation:

℞.—Hydrarg. ammoniat. . . gr. xxxv.
Balsam. Peruvian. . . . ℥j.
Olei petrolei . . . . ℥ijss.
Lanolini . . . ad ℥viij.—M.

WHITLA.

For the Paroxysm of Asthma.—

℞.—Morphinæ sulphat. . . . gr. $\frac{1}{4}$.
Atropinæ sulphat. } . . āā gr. $\frac{1}{100}$.—M.
Nitro-glycerini }

S.—Add to sufficient sterile distilled water, and inject hypodermatically at the onset of the paroxysm.

FUSSELL.

For Otorrhea.—

℞.—Acid. boric. . . . . ℥ijss.
Glycerini } . . . . āā f℥j.—M.
Aquæ }

S.—Instil a quantity sufficient to fill the auditory canal three or four times daily. J. LEWIS SMITH.

Treatment of Diphtheria.—GAUCHER (*Gaz. des Hôpitaux*, 1891, No. 122) recommends the local application of the following formula in the treatment of diphtheria:

℞.—Acid. tartaric. . . . gr. xxiv.
Acid. carbolic. . . . ℥ij.
Spts. vini rect. . . . f℥iv.
Olei ricini . . . . f℥vj.
Camphoræ . . . . ℥j.—M.

The membrane upon the affected surfaces is first gently removed. The application is then carefully made. After an interval of ten minutes, the parts are generously irrigated with boiled water, or a 1 or 2 per cent. solution of carbolic acid. If symptoms of laryngeal obstruction arise, a 2 per cent. solution of carbolic acid is constantly vaporized in the sick-room.—*Centralbl. für die gesammte Therap.*, x, 3, p. 172.

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SURGICAL INSTRUCTIONS FOR THE ENCOURAGEMENT OF VICE AND DEPRAVITY.

PERHAPS the physician is *not* "called upon to guard the morals of the community," though he that overlooks the intimate relation between immorality and unhealth can never be a sincere medical friend or a safe guide in the paths of hygiene.

If, however, we take but the narrow view of them that separate soul from body—or perhaps deny the reality of aught that is not carnal—even then it is hardly self-evident that the physician is called upon to aid in the debasement of public or private morals.

A recent number of one of our exchanges contains an article longer than seven columns, on "The Prophylaxis of Gonorrhea." All that the physician may legitimately teach on that subject needs but one word to be expressed completely and forcibly. That word, Chastity, is fittingly absent from among the thousands of words with which our cotemporary has not-graced its pages. The very types would have dropped from the forms had the attempt been made to introduce it into such companionship.

The article, it is true, does in a feeble way allude to the fact that one of the ways to "accomplish the exclusion of microörganisms" is "by avoiding exposure"—coupling it, however, with a shameless alternative, and intensifying the uncleanliness of the association by a mild deprecation of the alleged fact that "the majority of men greatly prefer the risk of infection to adopting *either* of these certain preventives."

In the low spirit of complaisant opportunism this "unfortunate" tendency is calmly accepted; and any possible fear that might deter the minority of men from emulating the majority, is sought to be dissipated by the assurance that if the voluptuary does but carefully follow certain directions elaborated in these seven columns of "libertinism made safe," the punishment provided for his vice may be surely avoided. Is the gonococcus, then, Nature's only avenging angel?

True, it is the duty of the physician to relieve suffering, to heal disease, no matter whether that suffering and disease be caused by unavoidable misfortune, by avoidable error, or by wilful vice. It is likewise his duty to point out how, by obeying natural laws, suffering and disease may be prevented. But this is a far different matter from pointing out how, notwithstanding deliberate infraction of natural laws, the suffering and disease that Nature has provided as penalties for such infraction may be avoided.

In the case under consideration, surgery is degraded from its high position as an alleviator of human misery to that of an abettor of vice; it is made, indeed, the servant of the bagnio. This involves a threefold prostitution: the unfortunate woman is made to prostitute her body; the man prostitutes not alone his body and soul, but what may be of more importance to mankind at large, his wealth,—for the greatest social misfortune is the abuse of wealth unto evil,—and, finally, the priest of HYGEIA prostitutes his altar to the "strange fires" of the Cyprian APHRODITE.

The medical profession should be heard with no uncertain voice on the great question here involved. Many a man has been sent to his ruin by the immoral, unhygienic, criminally sinful advice of miscalled physicians. We recall at this writing a brilliant youth who, at the critical period of his life, succumbed to the influence of a medical man—a college professor, now (shall we say happily?) deceased—as poor in moral principle as he was rich in all the intellectual force and social graces that attract the young and captivate the inex

perienced. Under this false physician's tutelage, the young man began a career of vice that directly led to forgery, flight, a father's "gray hairs brought in sorrow to the grave," the pecuniary ruin of a widowed and heart-broken mother. This is perhaps an extreme instance; yet it is but a single example out of many that we know, of the evil flowing from one singularly gifted man's malign advice.

It is not the religionist—the Puritan—only, who finds sexual immorality condemnable. Science abundantly confirms the message the Hebrews brought mankind from Sinai. The historian and the sociologist find in unchastity the prolific source of politic and economic woes. The evolutionist sees in promiscuity a survival of the instincts of the beast and of the practices of the savage. In the children of civilization it is a debasing atavism. Shall physicians endeavor to promote the progress of man from the bestial to the divine, or shall they facilitate his retrogression and degradation? What good purpose can be served by such an article as that published by our cotemporary? What base purposes can it not be made to further?

HIPPOCRATES was a heathen of the fifth century B. C. Contrast the oath that bears his name with this consummate product of the nineteenth century of Christianity.

THE SALTS OF STRONTIUM.

ATTENTION has recently been directed by various French observers, and especially LABORDE, GERMAIN SÉE, C. PAUL, and DUJARDIN-BEAUMETZ, to the therapeutic usefulness of the strontium salts. LABORDE[1] states that the toxicity originally attributed to strontium is due solely to the impurity of the commercial products formerly used, barium being the most common contamination.

SÉE credits VULPIAN, in 1885,[2] with the first attempt to make use of what he terms "the remarkable therapeutic properties of strontium salts."

The preparations employed in the experiments conducted at Paris were of absolute purity, and the results thus far reported seem to indicate that in strontium a valuable addition has been made to our resources. Whether or not the high laudations accorded to it will be found to be entirely deserved, must remain to be determined by future experience.

[1] Académie de Médecine de Paris, séances du 21 et 28 Juillet, 1891.

[2] Académie de Médecine, 28 Juillet, 1885.

The two salts of strontium thus far placed at the service of physicians, are the bromide and the lactate. The latter, according to SÉE, has a remarkable influence upon digestion and nutrition, probably due to a special action upon the stomach; whether local or general he does not state. The daily dose is from 8 to 12 grams (from 120 to 180 grains). It is employed in all conditions indicating the use of alkaline salts, in which it is said to be superior to the potassium, sodium, and lithium compounds, and in chronic nephritis, in which it is said to remarkably diminish the quantity of albumin excreted without increasing the flow of urinary water. In gouty nephritis, especially, it is said to be of great service. It likewise seems, from these observations, that a strontium salt—perhaps citrate or acetate, should the lactate be deemed inadvisable—might be advantageously employed in the treatment of acute as well as chronic rheumatism, and perhaps in the paroxysm of gout, as well as in the management of the gouty diathesis.

Strontium bromide will probably largely supersede potassium bromide in nearly all cases in which the latter has hitherto been administered for prolonged periods; and perhaps, when the price becomes more reasonable, strontium bromide will displace potassium bromide altogether. Not alone does it produce the sedative influence due to its halogen element, but on account of the superiority of its alkaline base, it avoids all the dangers to nutrition that have hitherto been so great a drawback to the use of the potassium and sodium compounds in the management of epilepsy and similar conditions. In fact, the French observers claim that strontium directly promotes nutrition, improving the action of the stomach and the urinary functions, when combined with bromine as well as in other forms. It is soluble in water in all proportions. It is said not to produce cutaneous eruptions, depression, anemia, or cerebral torpor. Even in large doses, it is said to be devoid of toxic power. It may be taken in doses of four grams (one dram) at each of the three daily meals.

Of thirty-two patients suffering from gastric dilatation, treated with strontium bromide and strontium lactate, SÉE[1] claims that the majority has been improved and some cured. In diabetes, likewise, it is claimed that strontium bromide reduces the quantity of sugar excreted; and that in the

[1] Académie de Médecine, October, 1891.

management of pulmonary tuberculosis it will find an important place in restraining cough and preventing the vomiting due to cough, at the same time producing its general tonic effect upon the stomach and digestive functions, and hence upon nutrition at large.

It would seem that other strontium salts, especially the iodide, chloride, fluoride, salicylate, and benzoate, ought to find many uses in therapeutics. It is to be observed that in the introduction of strontium into practical therapeutics and commercial pharmacy, manufacturers have supplied a demand originated by physicians; medical men have not been persuaded into creating a demand for the benefit of manufacturers.

THE PATHOLOGIST.

Do the readers of The News ever have special work for a pathologist? If so, do they ever think what the work of a pathologist is? Does it ever occur to them that he is a practising physician, in this respect occupying exactly the same position as they? That, at least in a majority of cases, he is also connected with some institution, and is much occupied in teaching? And, finally, for the foregoing reason, if for no other, that his time is valuable? In most cases the pathologist does his work at his leisure, if he has any. If a specimen is to be examined and reported upon, it may be not only inconvenient but often impossible for the pathologist to give an immediate report. Furthermore, it is to be remembered that, to be satisfactory, pathologic reports require tedious and prolonged researches, and much hard, earnest, and devoted labor. Aside from this, the pathologist not infrequently can make no report or examination until the tissue is sufficiently hardened for section-cutting. A physician has been known to call upon his pathologist with a tumor, and state that he would wait until the report could be given! Specimens of the nervous system require weeks, nay, in many cases months, before a scientific report can be made. Often, in so small a thing as the examination of urine, from twenty-four to forty-eight hours will, in many cases, be needed, especially when the sediment is deposited slowly, and the deposit of but small quantity. Sometimes the physician not infrequently asks for an immediate report, when this is not at all necessary. If the patient is dead, what is to be gained by rushing through the pathology of the case? Under such circumstances the sender must remember that his specimen will invariably be laid aside until those cases are examined upon which, for clinical purposes, an immediate diagnosis is needed. For example, if a liver is sent the pathologist, and on the same day he receives a small fragment of a tumor in which a diagnosis is wanted, the liver case must inevitably wait until the tumor-fragment has been examined. This is but just to the patient, and to the physician or surgeon who sends the specimen. In addition to the foregoing, the modern pathologist, if he has done any work at all, is not anxious to be rendering reports upon what many physicians state as merely an interesting case. He has, in all probability, examined many such interesting cases.

There is still another aspect of the case not usually taken into consideration: It may never have occurred to the physician that the pathologist is a consultant, and that in giving an expert opinion the pathologist shares responsibility in the case—that often an operation hangs upon his word. Under such circumstances should he not be paid for his work? Finally, if the case is incorrectly reported, he will certainly be blamed. Is there any serious objection, therefore, to giving him credit? As he occupies the position of a consultant, is he not worthy of the honor and the fee of a consultant? Not infrequently the proposition is made that the sender will pay expenses. If this means pay for the time consumed, then all is well—it should mean that. The next time that you have a specimen to send to the pathologist please remember that if you are to avail yourself of his knowledge he should be remunerated for his labor and his time, just as much as the oculist or the clinician, the work of these differing from that of the pathologist only in this, that the clinician considers the symptoms, and the pathologist the lesion.

DEATH FROM COCAINE.

"I have never seen it: *ergo*—"

No man's experience, however wide, can cover all the possibilities of disease and accident. It may be wise and well for one to say, "I have not seen it," when the possibility or likelihood of this or that pathologic or toxic accident is under discussion; but it is never wise and never well because of the perhaps happy limitation of one's own experience, to deny the reality of occurrences vouched

for by competent observers, and not in themselves incredible.

These remarks are prompted by the report in *L'Union Médicale* for December 22, 1891, of a death following the injection of half an ounce of a one and one-half per cent. solution of cocaine into the tunica vaginalis testis, preparatory to the injection of iodine for the cure of hydrocele.

The solution of cocaine was withdrawn after less than a minute and the iodine injected. In a little while the patient returned, complained of great weakness, had clonic and then tetanic convulsions, became comatose and died in cardiac syncope.

At the autopsy there was found general congestion of the meninges and lungs, mitral insufficency, and alcoholic lesions in the viscera. The tunica vaginalis did not communicate with the peritoneal cavity.

M. Richardiere, in whose service the accident occurred, stated that he had made autopsies in eleven cases in which death had resulted from the injection of cocaine.

In a recent discussion at one of our Philadelphia medical societies, several speakers were inclined to make light of the dangers attending the use of cocaine, on the ground that in their own practice no accident had happened. This was in the discussion, too, of a paper in which two cases of syncope and delirium were reported and several other cases—some of them fatal—were cited.

While far from wishing to restrict the legitimate use of cocaine, we do wish once more to emphasize the fact that the same caution should be observed in ascertaining individual susceptibility (idiosyncrasy) to this drug as in ascertaining the same fact with regard to opium, arsenic, and the like.

THE VALUE OF A TRADE-MARK.

Diuretin (Knoll) and theobromine sodio-salicylate are chemically the same. There is no patent, so far as we are aware, preventing the manufacture of the latter by any competent chemist. As a matter of fact, a pure preparation is upon the market from the laboratory of a most reliable chemist.

Diuretin is a copyrighted, or trade-marked, name. The preparation sold under that name costs $2.50 an ounce. A trustworthy preparation of the same thing, under its legitimate chemical name, costs fifty cents an ounce.

Would it be strange if, out of such profits, the proprietors of copyrighted, trade-marked, names of medicinal preparations could not afford to subsidize "medical" journals, special pleaders against the code, and writers of so-called "clinical reports"?

SELECTIONS.

THERAPEUTIC FRAUDS: HOW THE MEDICAL PROFESSION IS DECEIVED THEREBY.

As is evidenced by the tenor of the proceedings of the Minneapolis convention, the proprietary and patent medicine interests are prepared to go to any and all extremes to force their wares upon the medical profession. It, therefore, behooves every practitioner to scan carefully the character of the product brought to his notice and urged upon his acceptance. Especially dangerous is it to give a statement embodying advantages (real or supposed) attaching to any remedy of proprietary nature, since by erasures, emendations, etc., such, on appearing in print, are apt to present quite a different character from the original, and to embody considerably stronger and more definite commendation than was intended by the author.

Medical men should remember, proprietary interests are soulless, and influenced only by greed. The welfare of the ill and afflicted is the very last thing that enters into consideration, if, indeed, it ever cuts any figure at all. The aim is "the greatest profit with the least outlay."

That medicine is not an exact science is to be deplored, but, unfortunately, that which demands the utmost scientific care and acumen is the very factor that stands in the way of exactness. This also renders possible the success of the patent and proprietary medicine trades, and by means of the opprobrium that obtains in proportion to ignorance it is possible for these trades to obtain an influence that is exerted to the utmost to attain the desired ends.

For many years now proprietary interests have been steadily working to secure to their wares a semi-respectable and quasi-scientific standing. The tendency of the medical profession as a whole, and of their *clientèle*, to look to immediate and temporary, instead of future and actual, results has greatly aided the nostrum promoters in securing the aid, and on many occasions the confidence, of practitioners. Further, in many instances medical men who are careless of reputation, not animated by proper professional spirit, but seeing in their profession only means of money-getting, willingly act as "stool-pigeons," and prostitute themselves to these interests; they submit to be suborned and bribed to give utterance to laudations that have no tangible foundation, and it is a matter of regret that the number of this gentry is constantly increasing.

Again, therapeutics is burdened with an appalling list of proprietaries, and threatened with many more. Some are, perhaps, possessed of a measure of merit, but by far the greater number is undeserving of any confidence, while a large proportion masquerades under fancy, false, and misleading titles. Further, with a degree of power and insistence scarcely appreciable, an unusually large number is demanding (or preparing to

demand) recognition by the Pharmacopeia. Thus the attempt is slowly, insidiously, and none the less constantly being made to thrust these articles upon the medical and pharmaceutical profession by means of all the powerful machinery of political and individual interests, of monetary backing, etc., including bribery, false witness, and, in some instances, very close approaches to forgery.

The criminality of these procedures, which juggle with the lives and health of invalids and the sorrows of the afflicted, is a terrible comment upon our boasted nineteenth-century civilization.

We are led to the foregoing remarks, in part, by an exposure recently made in the columns of the *Bulletin of Pharmacy* for October and January last, regarding a trade-marked product termed "eucalyptol," put forth by an Australian firm; a product that, in spite of the claims of its proprietors (Sander & Sons) that they are the "only manufacturers of eucalyptol in the world," is as remote from being the article named as it is possible to be.

Some trite lessons as to the extent that fraud enters into marketing preparations of this class may be had by studying the moves of the proprietors of this fictitious eucalyptol.

They issued a circular, which has been distributed broadcast, purporting to be a translation of a paper on "Diphtheria," by Hugo Schulz, Professor at the University at Bonn, that is made to do duty as a direct laudation of their product, though Dr. Schulz, when communicated with, unreservedly repudiated the product, and denied all knowledge of the Sanders. His letter appears in the *Bulletin of Pharmacy;* further, in all his works Dr. Schulz speaks only relatively of oil of eucalyptus in diphtheria, declaring his preference, *first, last, and at all times*, for mercury.

A like trick is played with a paper of Prof. Mosler, of the University of Greifswald, published in No. 21 of the *Berlin. klin. Wochenschrift* for 1879. Widely separate paragraphs, having no relation to one another, are selected by the Sanders and deliberately garbled.

As further evidence of the character of the commendations published by the Sanders, the *Bulletin of Pharmacy* remarks as follows:

"In a circular sent out by 'Sander, M.D.,' of Dillon, Iowa, dated Sandhurst, Australia, July, 1891, appeared the names of eighty-five purported medical men, who are claimed as supporters of fictitious eucalyptol. One name is employed twice, which leaves properly but eighty-four. An analysis of this list shows the character of the evidence relied upon by the manufacturers to support their product. Four names after close investigation are demonstrated to have no tangible existence. Nineteen are arrant quacks, devoid of medical qualification. Thirty-three are doubtful; that is to say, cannot be found in Polk's register or in local directories, hence may be presumed to have no existence[1]—or perhaps are new graduates, consequently without experience and incompetent for evidence. In five instances there is no such name or post-office as that given.

"Of those having authority to practise medicine, eight wholly repudiate the Sanders and their product, twelve have their names and addresses distorted, and there remains a total of but three individuals of presumed reliability for evidence. From these three must be deducted the name of Dr. Bartholow, which is made to do duty as a quotation from the *Medical Brief*, but which, as it appeared in that journal, bears unmistakable evidence of being a paid advertisement. The standing of Dr. Bartholow is evidence sufficient he never gave countenance to such 'scheme of piratical procedure.'" —*Editorial in the American Lancet, March*, 1892.

[1] Several are already found to have no real existence, while others are from dentists, druggists, surgical instrument dealers, saloon-keepers, and others who are by the Sanders clothed with medical titles and authority. We have been shown a letter regarding one Osborne, quoted by Sander, resident of Cottageville, Ky., who is an itinerant peddler, has served several times in gaol for violation of the laws, has never studied medicine, and never pretended to practise.—Ed.

THE FUNCTION OF MYDRIATICS IN CORRECTING ERRORS OF REFRACTION.

"Nowadays the corneal astigmatism is measured with an ophthalmometer, and the rest of the work is easy with no mydriatic." This is the closing sentence in an editorial communication published in the *Post-Graduate* for February, 1892. With the main portion of this communication we are not at present concerned, but the sentence which has been quoted demands some consideration and a good deal of condemnation.

It is evident that refractive error may be corrected in one of three ways—first, by what the writer in the *Post-Graduate* is pleased to call "the ancient practice"—namely, paralyzing the function of the ciliary muscle with a mydriatic, and working out the refractive error with the trial lenses; second, with the shadow-test; and third, with an ophthalmometer.

It is fair to assume that a mydriatic exercises three functions—first, to paralyze the ciliary muscle; second, to dilate the pupil, and hence to facilitate a thorough examination of the refractive media and the periphery of the eye-ground; and third, to place the eye at complete physiological rest, so that the lesions so commonly present as the result of prolonged eye-strain may subside—not alone, we take it, merely because there is physiological rest, but because of a distinct sedative influence exercised by the drug.

We are very far from decrying either retinoscopy or the use of an ophthalmometer—both of them advances in practical ophthalmology of inestimable benefit; but we are also very far from believing that the high standard of refractive work which has been attained in this country, certainly in some portions of this country, will continue to maintain the position which it now holds, or will advance still further, if the doctrine is taught that the use of mydriatics is an "ancient practice," and that the measurement of corneal astigmatism with an ophthalmometer is always sufficient. A sentence in the last edition of Mr. Nettleship's excellent manual is *apropos:* "I think that there is reason to fear that the free use of retinoscopy by students, before they have mastered the more difficult 'direct method,' may tend to lower the present high quality of English ophthalmoscopic work." Equal dangers are the tendency to trust an

ophthalmometer too implicitly, to fail in the detection of low degrees of astigmatism, and, finally, to adjust glasses to eyes that are not fitted to wear them, because there has been an imperfect examination of the refractive media and periphery of the eye-ground, and because the results of eye-strain have not been eliminated by the sedative measures to which allusion has been made. An ophthalmometer should always be used, and in suitable cases a mydriatic may be excluded; indeed, it is readily granted that it is often unnecessary; but the doctrine that mydriatics should not be employed in the estimation of errors of refraction is unworthy of converts.—*Therapeutic Gazette, March* 15, 1892.

AN ASYLUM FOR SUPERANNUATED INSTRUMENTS.

ACCORDING to a London letter to the *American Practitioner and News* for January 16th, old and discarded surgical instruments can be put to a good purpose by being sent to missionaries in foreign lands. A benevolent member of the Royal College of Surgeons has made a suggestion that all old-fashioned and discarded surgical implements be brought out of their dark corners and placed in the hands of the secretaries of those societies which employ medical missionaries. The gentleman who makes this appeal states that he knows of an instance of a missionary who had no other instruments than an ordinary case-knife and a pair of scissors with which to remove the frozen foot of a North American Indian, in whose case an operation was so imperative that he proceeded to operate with these. Fortunately the patient survived. A beginning has already been made by forwarding certain superfluous instruments and appliances to the Missionary Training College in East London. Old operating-cases, dental instruments, tourniquets, trocars, sounds, catheters, etc., may all be welcome and find their best value in the hands of those lonely pioneers, many of whom are a hundred miles distant, perhaps more, from any possible assistance.

CORRESPONDENCE.

A PHYSICIAN'S OUTFIT.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS of November 28, 1891, there was an editorial on the subject of physicians dispensing their own medicines. I wish to give in brief my experience and my methods as regards this, for the information of some of the younger members of the profession who may have just begun or are about to begin practice. Some physicians dispense their own medicines from necessity, some from choice—the necessity or choice depending on how near they or their patients are to the nearest drug-store. I have done both prescribing and dispensing, and as a result of my experience would say, that with the exception of a few articles, I prefer to dispense my own medicines, even when a drug-store is only a few doors away. The reasons for doing this are well stated in the editorial referred to, and substantially agree with my experience. To my mind, these are the most important:

First. In the case of office-patients they are much more likely to pay cash at the time of the visit if they get the medicine then and there, than they are to pay for advice only and the prescription. I find no difficulty in charging an advance sufficient to pay the cost and a fair margin of profit on the medicine given. When the cost of the medicine is only trifling I charge no advance. In the case of patients with only a little money they will neglect to pay the doctor because they must save the money to pay for the medicine. When the doctor is his own druggist, he is more likely to get paid both for his advice and his medicine.

Second. When we dispense our own medicines a large share of the competition of homeopathy is removed. In fact, I have been not infrequently called a homeopath, because I mixed up medicine in a glass at the patient's house. The average layman's idea of a homeopathic physician is one who gives pleasant medicine and mixes it himself. I believe a large share of the popularity of homeopathy is due to this fact, rather than to any comprehension of or belief in the principles of Hahnemann.

Third. There is great saving in time, especially in acute cases. When the physician has the remedies with him, he can administer them at once, instead of being obliged to wait until the prescription can be filled at some drug-store.

Fourth. Safety. There is much less liability to errors of administration when the first dose is given by the physician himself (I refer now to house-visits).

The foregoing reasons all hold true when the physician has his druggist next door, as well as when, like myself, he has a country practice of from four to six miles' radius. In country towns a certain amount of personal dispensing is absolutely necessary, even if there be a drug-store in the town; because patients cannot be expected to send from three to six miles for the medicine after the doctor has made his visit. In my own field I carry the only drug-stock in town and hence do all my own dispensing for both office and house patients. I carry two satchels, one for buggy use, and a smaller one with fewer remedies for calls nearer home.

For the benefit of some of the younger men I will give the contents of my buggy-case, more as suggesting remedies than as laying down any rule as to what should be carried. In making the selection of remedies one's own preference and the season of the year are to be consulted, in summer the variety being a little different to that for winter. By having extra bottles of the various sizes fitting one's case, the variation in remedies is easily accomplished and without loss of time. Owing to the large number of excellent and reliable preparations of remedies now obtainable in the form of triturates and tablets, quite a variety can be carried in a small compass. These preparations are as palatable as the homeopathic remedies, while they have much greater therapeutic effect.

My buggy-case contains eighteen one-ounce vials, in which I carry: Potass. brom., in crystals; sodium salicylate, in powder; ammon. chloride, in crystals; pepsin saccharatum; potassium chlorate; sodium bicarb.; acetanilid; calomel $\frac{1}{8}$ gr., bismuth subnit. 2 gr., soda bicarb. 2 gr.—mixed in this proportion and labelled nausea powder (satisfactory in nine cases out of ten for

nausea); spts. æth. nit.; tr. digitalis; tr. opii deod.; ammon. carbonate, saturated solution, gr. xv to ʒj; alcohol; tr. cardamom co.; acid hydrochloric dil.; spts. ammon. aromatic; chloroform; and quin. sulph., in two-grain, sugar-coated compressed tablets (these, being flat, are readily swallowed, and have the additional advantage that very few people suspect them of containing quinine; if only one grain is wanted, they are readily cut in two).

There are eleven half-ounce bottles, containing: Tr. aconiti; tr. belladonnæ; lead acetate; chloral, in solution, gt. j to gr. j; tr. capsici; bismuth subnitrate; tr. nucis vomicæ; fl. ext. ergot; sugar of milk; pulv. ipecac. et opii; tablets—iron, arsenic, and strychnine.

There are twenty-four two-dram vials, containing: Caffeine citrate; tannin; calomel; Turpeth mineral; borax; persulph. iron; pulv. ipecac; fl. ext. ipecac; comp. tr. opium; and the following in tablets: "Hepatic" (containing euonymin $\frac{1}{8}$ gr., podophyllin $\frac{1}{20}$ gr., ipecac $\frac{1}{8}$ gr., calomel $\frac{1}{8}$ gr., aloin $\frac{1}{12}$ gr.); aloin $\frac{1}{5}$ gr.; strychnine $\frac{1}{80}$ gr.; ext. belladon. $\frac{1}{8}$ gr.; ext. cascaræ sag. $\frac{1}{8}$ gr.; calomel, $\frac{1}{10}$ gr.; soda, 1 gr.; "rhinitis" (containing quin. sulph. $\frac{1}{4}$ gr., ext. belladon. $\frac{1}{8}$ gr., camphor $\frac{1}{4}$ gr.); ammon. mur. comp. with codeia (containing ammon. mur. $\frac{1}{4}$ gr., licorice $\frac{1}{10}$ gr., cubebs $\frac{1}{8}$ gr., codeia $\frac{1}{25}$ gr.); "sciatica" (containing tr. aconite $\frac{3}{4}$ ♏, tr. bellad, $\frac{3}{4}$ ♏, cimicifuga, $\frac{3}{4}$ ♏, tr. colchicum $\frac{3}{4}$ ♏—a very satisfactory combination); calomel, $\frac{1}{4}$ gr.; Dover's powder, gr. j; rhubarb and soda; morphine sulph., $\frac{1}{4}$ gr.; nitro-glycerin, $\frac{1}{100}$ gr.; calcium sulph., $\frac{1}{10}$ gr.; "fever" (containing tr. acon. 1 ♏, morph. sulph. $\frac{1}{20}$ gr., tartar emetic $\frac{1}{50}$ gr., ipecac $\frac{1}{8}$ gr.); nitro-glycerin comp. (containing nitro-glycerin $\frac{1}{100}$ gr., tr. digitalis ♏ij, tr. strophanth. ♏ij, tr. belladon. ♏$\frac{1}{2}$, tr. ginger, ♏v, pulv. opii $\frac{1}{4}$ gr.). In a compartment in the same case are nitrite of amyl pearls; opium and belladonna suppositories; pil. cath. comp., U. S. P.; and extra hypodermatic tablets; also a catheter and powder papers. The whole is arranged so compactly that the case is by no means uncomfortably large. With it, filled as indicated, almost any condition likely to be met with can be satisfactorily treated, or at least cared for until any further needed remedies can be brought at a subsequent visit. Most of the time I find it all I need; having, as I said, extra bottles of all of the sizes. I vary the contents as occasion may require, depending upon the season of the year and the prevailing medical fashion as concerns remedies. A word about administering remedies at the house: Tumblers and spoons vary very much, but sufficient accuracy with liquids and powders mixed in water can be attained by measuring in the glass to be used, with the spoon to be used, the desired number of doses, and then adding the medicine accordingly. This is quite as exact as the usual prescription label of a teaspoonful, no directions being given as to the size of the teaspoon. This measuring of the water in the glass does not take long and insures accuracy. Another thing that I have found of great help is to write out in full all the directions, with the exact hours when everything is to be given, especially in cases of acute illness. This makes a sort of calendar and avoids all chance of misunderstanding, and by having each dose as given checked, the physician can tell the next day at a glance just what has been done. The directions are written on a piece of powder paper, always in the medicine-case, so that no time is lost while the family hunts for paper, and the time required is very short. Powders are made sufficiently accurate in most cases without weighing, especially if they be weighed out a few times in one's office and an approximate idea of size and weight obtained. For surgical work I carry always ready, a bag with bandages, ether, gauze, and cotton, a syringe, and antiseptic tablets and powders. For obstetric work my armamentarium is that usually carried.

Geo. L. Richards, M.D.

Marion, Mass.

PEROXIDE OF HYDROGEN IN DIPHTHERIA.

To the Editor of The Medical News,

Sir: The article "*In Re* Hydrogen Dioxide," by Dr. Wallian, of New York, in The Medical News of January 30th, reminds me of an experience that I had in December. This experience, while not resulting fatally to my patient, was quite alarming, and illustrates how, as a profession, we may be at the mercy of unscrupulous wholesale pharmacists. At the time I refer to I was treating several cases of diphtheria, using the peroxide of hydrogen, diluted one-half, as a throat-wash, applied by means of an atomizer. The results were good and the case of which I wish to speak particularly had almost recovered, there being but a slight remnant of a membrane on one of the tonsils, and this presented the rotten, swollen condition indicative of its speedy disappearance. At this time the retail druggist had just received a new supply of hydrogen peroxide—a fresh one so far as we could judge—and with some of this my prescription was refilled. This last supply was not from the same manufacturer as that we had been using, but was one of the most extensively advertised New York brands, put up in a long-necked bottle with space "necessary for expansion," as Dr. Wallian describes his sample No. 2.

After this had been used in the child's throat two or three times, the mother became alarmed at the effect and sent for me in great haste. Her attention had been called to the change in the medicine by the fact that the child would cry with pain whenever she would use the spray. Before this he had been quite docile. On examining the child's throat I found a very thin, grayish membrane covering the tonsils, uvula, and posterior pharynx, and around the edge of it in the mouth, the mucous membrane was reddened and angry-looking. On gargling my own throat, which was not tender, with the solution, I experienced a sharp burning sensation and my teeth were "set on edge" by the hyperacidity of the solution.

The membrane in the child's throat ran the typical course of a diphtheritic membrane, lasting, however, about a week. That the fresh invasion was caused by the irritation from the hyperacidity of the solution, I have no doubt, and I am strengthed in this belief by the fact that it ceased to extend as soon as the peroxide was withdrawn from the throat-wash, and by the fact that another case fared in a similar manner from the use of the same sample, although in this latter case the symptoms were not so alarming.

Now, I am thoroughly convinced from an experience in several severe epidemics, since its introduction, that

the peroxide of hydrogen is one of the most valuable, if not *the* most valuable, local agent we have in diphtheria, and I sincerely hope that an agitation against the sale of an impure article may touch the stony heart of the pharmaceutic chemist, so that we shall neither have to abandon this useful agent, nor prescribe it with fear and trembling that we may do the little sufferer from diphtheria more harm than good. I know that it is rather an unstable article, but I also know that some samples are harmless and do their work well, while others may be deadly in their effects on a child suffering from diphtheria. Respectfully yours,

John R. Espey, M.D.

Trinidad, Col.

UNTOWARD EFFECT OF CODEINE.

To the Editor of The Medical News,

Sir: A recent editorial in The News and a paper by the writer, "The Prevention of Morphinism," read before the American Medical Association, May 6, 1891, in which codeine is commended in lieu of morphine, make pertinent an added statement regarding it.

From proof at hand, there is reason to think that codeine will have a larger place in professional favor than it has had, and in order that its good repute may not be lessened, an incidental effect, several times observed during a large and satisfactory experience with it, may well be noted. This effect, it is quite proper to say, has been seen only in ex-morphine and ex-chloral habitués, but it is fair to presume that a like idiosyncrasy will, at times, be met with among those not addicted to either drug.

The first case was that of a druggist taking several grains of morphine daily, to whom I gave twelve grains of sulphate of codeine in one dose by the mouth, as a substitute for four grains of morphine. In less than half an hour he began to complain of great general itching; his face swelled until one eye was quite closed; his hands were puffed until he could not shut them, and his body—notably the back—became covered with large scarlet patches. There was no disturbance of brain, heart, or lungs. Most complaint was made of the itching. Prompt relief of this was brought by fluid extract of witch-hazel freely applied, and, with the redness, it soon subsided, but the swelling of the face and hands persisted for five days. There was no desquamation.

Since then I have seen four others—three, females—treated with doses from 1⅓ grains subcutaneously to 2 grains by the mouth, with the same, though much milder result. As in the first case, the itching was most complained of, and a peculiar feature of this was that it began in the head. There was no redness. The man's face was somewhat swollen. In all, the hamamelis worked well.

Lewin, in his *Incidental Effects of Drugs*, makes no mention of codeine, but cites a striking case of similar result from morphine in a man: "The eyelids were swollen, the whole face edematous and red, and wheal-like prominences appeared on the hands and other parts of the body."

Codeine possessing one-third of the power of morphine, it usually need not be given in doses larger than from ½ to 1 grain subcutaneously, or double that by mouth, so that, except in very impressible patients, effects such as I have noted are not to be expected.

It need only be added, that care is called for in these cases not to give too large doses.

J. B. Mattison, M.D.

Brooklyn, N. Y.

NEW YORK.

Castration as a Substitute for Capital Punishment.

At the last regular meeting of the New York Society of Medical Jurisprudence, held at the Academy of Medicine on Monday evening, March 14th, Gen. William A. Hammond, M.D., of Washington, read a paper entitled "A New Substitute for Capital Punishment and Means for Preventing the Propagation of Criminals."

Dr. Hammond began by stating that the primary object of all punishment for crime is the protection of society. Punishment should be of such a character as to act as a deterrent to crime to the utmost extent. Statistics, as well as the experience of all ages, show that the fear of the punishment of death has never prevented man from injuring society. Imprisonment for life has proven even less of a deterrent than death. This last form of punishment is not so terrifying to the criminal; there is always the hope of a chance to escape or of a pardon. The objects to be accomplished by punishment of crime are threefold: First, it should act as an example to others. Second, by placing the perpetrator in such a position that further infringement of the laws will be impossible. Third, by inflicting such an amount of mental and bodily suffering upon him that he will experience a lively sense of his crime; and hence, when he has incurred that punishment, he will be less prone than before to repeat his offence.

It is clear that to accomplish all the objects for which punishment is intended, neither death nor life-imprisonment are satisfactory, and some other means must be sought for. This method, Dr. Hammond stated, we have in a punishment which even in our own time and in this country has been occasionally employed for certain crimes—namely, castration. From a very early period castration was inflicted for adultery and rape. It has been in vogue in certain European countries, and not many years ago several negroes in Missouri were punished in this way for committing rape upon a white girl. The speaker said he would only refer to castration as a punishment for murder, and that his object was simply to show that this form of punishment would prove more deterrent than capital punishment or imprisonment for life; that it would entirely remove the man from the criminal classes, and that it would prevent the propagation of criminals.

1. Castration as a deterrent to crime. A man places greater value on his generative powers than on his life. As a French writer has said, "the dignity of a man resides in his testicles." When they are removed there is a marked change in the man. He cannot open his mouth without exposing his condition. The facial expression becomes altered. The man becomes cowardly and effeminate. It leaves a stain upon him worse than that

placed upon Cain. Dr. Hammond stated that the three negroes who were castrated in Missouri uniformly expressed a preference for capital punishment. He has several times put the question to criminals under sentence of death, and they all said they would rather hang than be deprived of their testicles. Juries that now hesitate about inflicting capital punishment would be less squeamish about castration. It would be a continuous punishment. It is not the intenseness of pain that has its greatest effect, but its continuance.

2. Castration would have the effect of making the criminal of some use to society. A dead man is of no use to society, and a man in prison is almost as bad. There are many occupations that would be open to him; he could occupy any position in which boldness or originality are not essential. Possibly he might make a good clergyman. He would not make a soldier, or a sailor, or a policeman, but he could edit a mild newspaper or make an efficient member of the legislative body. The value of eunuchs as singers has long been known. They would make excellent dry-nurses and safe type-writers.

3. Castration is probably the most powerful agent we have that will so alter the physical characteristics of a man as to remove him from the criminal classes. We can learn a great deal of the effects of the operation by performing it upon the lower animals. After it is done the fierce ram becomes mild and the cat ceases his nightly raids. So far as the human species is concerned, our observation is largely limited to the Orient, to those who have suffered from wounds or disease of the organs, and to those upon whom the operation has been performed for punishment. The universal testimony of persons who have travelled in Eastern countries is that the operation takes away all the dangerous elements that are present in the person; they become mild and obedient; they delight in the care of young children. It is true, however, that it causes a degradation of the moral as well as the physical qualities.

Dr. Hammond said that ten cases of castration have come under his notice. Three were the negroes who were punished in that manner for rape; two had lost their testicles as the result of disease; one had them removed as a possible cure for epilepsy; one had mutilated himself during an attack of delirium tremens, and three had been shot in battle. All these men were materially changed, and, what is more remarkable, all of them who were in the habit of taking alcoholic liquors lost their appetite for it. Castration probably produces a profound change in the brain-structure. As a reformatory agent, it stands unequalled by any other radical act we have.

4. As a means of preventing the propagation of criminals, it is as sure as death itself. If this form of punishment had been adopted a few hundred years ago, many thousand acts of crime would not have been committed. It is less cruel than capital punishment, more efficacious than imprisonment for life.

The scope of this paper has been restricted to the male sex. Women have become so accustomed to removal of the ovaries, and these organs are so much less essential to womanhood than the testicles are to manhood, that it might be necessary to substitute imprisonment for life in their case. Female murderers, however, are much less common than male, so that the matter is not of great importance.

Dr. Hammond concluded his paper by stating that he did not expect to see this measure adopted during his lifetime, or during that of any of his hearers. It is so radically different from the method that modern society has seen fit to establish that its adoption will take a long time. It took thousands of years to abolish torture and make other changes in the laws, and he felt sure that the method of dealing with criminals he had advocated in his paper would be more humane and efficacious than the one now employed.

In the discussion that followed the reading of Dr. Hammond's paper, Dr. Landon Carter Gray stated that the suggestion was so novel that he was rather taken aback. Any method that would prevent the propagation of the criminal class is certainly worthy of attention. The point he wished to criticise in Dr. Hammond's paper was that it had not been shown conclusively that castrated males will not commit acts of violence. It is reported that many crimes are committed in the harems in the East; what part the eunuchs played in these he did not know. In females ovariotomy has been done on an exceedingly liberal scale in late years, and it does not seem to eliminate their sexual characteristics.

NEW ORLEANS.

To the Editor of THE MEDICAL NEWS,

SIR: The Louisiana State Medical Society will meet in this city on the 26th of April. Until this year there did not seem to be much interest in the meetings, but this one will probably have a large attendance, as several questions of importance will come up. The most important will be the bill to regulate the practice of medicine in Louisiana. This bill is very similar to the one that was presented four years ago, but was then defeated. Some of the items of the proposed bill are as follows:

"That after the passage of this Act any person before entering upon the practice of medicine, in any of its branches, except dentistry, shall present to the Board of Medical Examiners a diploma from some medical college in good standing, and he shall present himself before the Board for examination upon the following branches, viz.: anatomy, physiology, chemistry, and the general principles of medicine and surgery, but without reference to any sectarian school or special dogma or doctrine.

"That immediately upon the passage of this Act, the Governor shall appoint six graduated physicians, one from each congressional district of the State, as a State Board of Medical Examiners, whose duty it shall be to examine into the qualifications of all applicants for permits to practise medicine in any of its departments, in accordance with the foregoing sections of this Act: Provided, that at all times not less than one-half the members shall be appointed from a list of thrice as many names furnished to the Governor by the State Medical Society.

"That any itinerant vender of any drug, nostrum, ointment, or application of any kind, intended for the treatment of disease or injury, or who may, by writing, print, or other methods, profess to cure or treat disease or de-

formity by any drug, nostrum, manipulation, or other expedient in this State, shall, if found guilty, be fined in any sum not less than twenty-five ($25) dollars and not exceeding one hundred ($100) dollars for each offence, to be recovered in an action of debt, before any court of competent jurisdiction, or shall be imprisoned for a term of not less than ten (10) days or more than thirty (30) days, or be both fined and imprisoned.

"That any person shall be regarded as practising medicine, in any of its departments, within the meaning of this Act, who shall append the letters M.D. or M.B. to his or her name, or repeatedly prescribe or direct, for the use of any person or persons, any drug or medicine or other agency for the treatment, cure, or relief of any bodily injury, infirmity, or disease. This Act shall not apply to dentists or midwives in the legitimate practice of these branches, nor to farmers and planters when exclusively practising, without compensation, on their employés in emergencies."

The new out-door clinic buildings of the Charity Hospital will be opened on the 5th of April. Heretofore the out-door clinic, amounting to more than 14,000 cases annually, has been treated in the wards.

One frequently hears of an effort to do away with the so-called "society practice" here, but it is not probable that it will be done, as there are many men here who seem to care but little for their own interests or those of the profession. This society system is in many ways a peculiar one. A party of men form a society, the dues of which are small. They engage a physician to do their work for an absurdly small fee, in some cases not amounting to more than a dollar a year for a member and his family. The member has a right to call the physician as often as he wishes, and frequently calls him when it is unnecessary. Many of the profession are very much opposed to this system and have tried several times to stop it, but have not been successful. It is to be hoped that the next will be a successful effort. The people who belong to these societies are laborers, of whom many could easily pay a fair fee. W.

NEWS ITEMS.

In Memory of Dr. D. Hayes Agnew.—At a regular meeting of the Philadelphia County Medical Society a minute relative to the death of Dr. D. Hayes Agnew was adopted, and a committee of ten members was appointed to represent the Society at the funeral.

At a special meeting of the College of Physicians of Philadelphia, called for the purpose of taking action in connection with the death of Dr. D. Hayes Agnew, eulogistic remarks were made by the president, S. Weir Mitchell, by John Ashhurst, Jr., and by W. W. Keen. A minute offered by Dr. Charles J. Stillé was adopted. It was agreed that the College should attend the funeral in a body. The president was authorized to appoint a Fellow to prepare a memoir of Dr. Agnew.

The funeral of the distinguished surgeon, teacher, and author was held amid impressive ceremonies on Friday, March 25th.

The Medical Society of the State of Pennsylvania will hold its forty-second annual meeting at Harrisburg May 17, 18, 19, and 20, 1892. Dr. J. H. Musser, of Philadelphia, will deliver the Address on the Practice of Medicine; Dr. T. D. Davis, of Pittsburg, the Address on Surgery; Dr. H. G. McCormick, of Williamsport, the Address on Obstetrics; Dr. J. W. Phillips, of Clifton, the Address on Mental Disorders; Dr. G. R. Rohrer, of Lancaster, the Address on Otology; Dr. A. A. Woods, of Erie, the Address on Hygiene.

Dr. H. A. Hare, of Philadelphia, chairman, will present the Report of the Committee on Pharmacy; Dr. J. A. Lippincott, of Pittsburg, chairman, the Report of the Committee on Contagious Ophthalmia; Dr. W. Murray Weidman, of Reading, chairman, the Report of the Committee on the Rush Monument Fund.

Addresses of Ophthalmologists Desired.—The Editor of THE MEDICAL NEWS wishes to obtain the addresses of all ophthalmic surgeons or physicians especially interested in ophthalmology residing in the United States and English-speaking countries of this continent. Please use postal cards addressed to this office, the word OPHTHALMOLOGIST accompanying the address.

Kitasato, who for six years has been pursuing studies at the Hygienic Institute, at Berlin, has been called to Tokio to assume the direction of a bacteriologic-hygienic laboratory soon to be opened.

BOOKS AND PAMPHLETS RECEIVED.

Abdominal and Uterine Tolerance in Pregnant Women. By Robert P. Harris, A.M., M.D. Pamphlet. Philadelphia: Dornan, 1892.

Nasal Papillomata. By Jonathan Wright, M.D. Reprint, 1892.

Subglottic Neoplasms. By Jonathan Wright, M.D. Reprint, 1891.

Lectures on Surgical Pathology. (The Mütter Lectures for 1891–92.) By Roswell Park, A.M., M.D. Reprint, 1892.

A Human Embryo, Twenty-six Days Old. By F. Mall, M.D. Reprint, 1891.

Are Inebriates Curable? By T. D. Crothers, M.D. Reprint, 1892.

Influenza: Its History, Etiology, Pathology, etc. By Charles H. Merz, M.D. Pamphlet. Sandusky, Ohio: L. J. Beecher & Co., 1892.

Twenty-first Annual Report of the Managers of the Buffalo State Hospital for the Year 1891. Albany: James B. Lyon, State Printer, 1892.

Bacteriological Diagnosis: Tabular Aids for Use in Practical Work. By James Eisenberg, Ph.D., M.D. Translated and Augmented, with the Permission of the Author, from the Second German Edition, by Norval H. Pierce, M.D. Philadelphia and London: The F. A. Davis Company, 1892.

Contributions to the Physiology and Pathology of the Nervous System. From the Private Laboratory of Isaac Ott, M.D., of Easton, Pa. Part XI. Reprint, 1891.

Supracotyloid Dislocation. By John Ridlon, M.D. Reprint, 1891.

Neuroma. By Edmund J. A. Rogers, M.D. Reprint, 1892.

Aphasia and Other Affections of Speech, etc. By Charles K. Mills, M.D. Reprint, 1891.

Laparotomy under Cocaine. By Emory Lanphear, M.D., Ph.D. Reprint, 1892.

Announcement of the Charleston Medical School, 1892.

Text-book of Nursing. Compiled by Clara S. Weeks-Shaw. Second Edition, Revised and Enlarged, with Illustrations. New York: D. Appleton & Co., 1892.

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ORIGINAL ARTICLES.

THE RELATION OF BACTERIA TO DISEASE.[1]

BY HENRY C. CROUCH, A.M. (YALE), M.D. (GIESSEN, GERMANY),
OF COLORADO SPRINGS.

IN the evolution of modern scientific thought it is interesting to observe how many of the theories deduced from the exact methods of research and the careful experimentation of to-day, seem to have been anticipated in the speculations and conceptions of past ages. The atomic theory of matter that is at the basis of those most exact of modern sciences, chemistry and physics, was apparently already contained in the teachings of Democritus. The germ-theory of disease is almost of equal antiquity, and the latest investigations in modern bacteriology indicate the development of certain views that seem like the rehabilitation of the humoral pathology of the past, with its crases and dyscrases, its humors and its diatheses. I say advisedly *seem*, for on closer examination, although the superficial resemblance is obvious enough, the difference is greater and deeper. For vague conceptions and metaphysical speculations are substituted definite ideas, fixed laws, and determinate relations. But especially in the limitations of the modern theories, and the coëxistence of apparently contradictory, but in reality mutually explanatory natural laws, is this difference the most striking. Especially is this so in the field of medicine. The advance in late years has been immense and rapid; but the very nature of modern methods carries with it the condition that, to be intense, investigation must be limited in its scope and narrow in its field. It is not strange, then, that investigators themselves, under the vivid impression of newly discovered facts in their particular province, sometimes partake of this narrowness, and, extending their deductions beyond legitimate limits, deny the existence of what had seemed to past observers well-established clinical facts, and oppose dogmatic dicta to conservative prejudices. Such, for instance, has been the attitude of certain bacteriologists toward the doctrine of the heredity of pulmonary tuberculosis. However, in casting overboard the rubbish and lumber of past generations, it has often been necessary to rescue valuable truths, apparently contradicted by newer discoveries, and to restore them to the former position to which further research and wider knowledge again assigns them. And thus, I think, the developments of the last months in bacteriology will explain some of the contradictions between clinical observation and laboratory deductions. It is these currents in bacteriologic investigation to which I alluded in speaking of the apparent rehabilitation of the old doctrines of the humoral pathology; and I would like to select from the results of the immense labor of the past few months some of the more striking facts, and endeavor, in crude outlines, to construct a picture of the present position of bacteriologic science in its bearing on the causation of disease.

The introduction by Koch of his gelatin-plate methods marks a distinct epoch in bacteriologic investigation. It may be compared in its effects to the invention by Sims of his speculum. Apparently nothing more than an improvement in the purely technical part of investigation, it alone has rendered possible the great achievements of modern bacteriology. By its application, in connection with the improvements introduced by other workers in this field, it was shown that certain diseases were always connected with the presence of certain microörganisms; that these presented certain peculiarities in reaction toward certain stains, in their growth in cultures, and in other ways by which they could be distinguished from other apparently perfectly similar forms; that by inoculation with these cultures the disease could be reproduced in animals, or even in man—that is, that those microörganisms were specific for certain diseases, or, in other words, were their cause. In the enthusiasm excited by these discoveries, investigation was naturally directed to the detection of new pathogenic organisms, their classification and life-history. This may be called the morphologic period of bacteriology. As is the case with all methods, however, the time arrived when the results began to become more meager. Arrived at this point, investigators began to review the work accomplished, and, having proved that certain diseases were due to certain specific bacteria, a new question began to force itself on them, and demand their attention. This question was: *How* is the microörganism the cause of the disease? With the asking of this question it began to be realized that the greater part of the task was yet to be accomplished, and bacteriology entered on the second stage, which I would term the bio-chemical.

[1] Read before the El Paso County Medical Society.

This stage, fraught with the most wonderful possibilities for the recognition, the prevention, the cure of some of the most destructive and deadly of diseases, by the application to therapeutics of the knowledge gained by these investigations, demands our recognition and attention.

Life is the expression of chemical changes in the organism. Substances are introduced from without, undergo various changes, and the results of these changes are finally ejected from the organism in the form of bodies, infinite in number, complex in constitution, and varied in their properties. The undue retention of these products in higher organisms is accompanied by serious injury to the organism itself. By analogy, then, the metabolic products of bacterial life might be important, or even chief factors in the production of disease in the organisms in which they have their parasitic existence. It had been shown that by the introduction of pure cultures of a specific bacterium into an animal, the particular disease could be reproduced with almost mathematic certainty. If, now, instead of the microbe, the metabolic products, entirely separate from the microbe itself, be introduced, these, if they are the important factor, should reproduce the symptoms of the disease. This has been found to be the case. In illustration, we will take diphtheria. It has been proved, beyond doubt, by repeated and careful investigation, that the majority of cases of real diphtheria, and especially those of a malignant nature, are due to a peculiar microphyte called the Klebs-Löffler bacillus, found in the diphtheritic membrane. In 1888 Roux and Yersin published the results of their experiments in this direction. Having cultivated the bacillus in bouillon, and having tested in animals the virulence of the culture containing the bacilli, they proceeded to filter the bouillon through the porcelain cylinders of the Chamberland-Pasteur filter. Animals inoculated with the clear filtrate thus obtained, which was also shown by further tests to be entirely free from germs, developed all of the symptoms of diphtheria, including the characteristic paralyses, in the same manner as when subjected to inoculation with cultures of the virulent bacilli. Here, then, we have a case in which the metabolic products of bacteria, introduced into the system and circulating through its channels, are undoubtedly the chief factor in the disease. Accordingly, our attention must be directed to these products of bacterial life; they must be isolated, as far as possible, and examined with reference to their effects on animals; their course and ultimate fate in the organism must be ascertained; the means of defence which the organism possesses are to be studied, and methods for assisting these, or in other ways combatting the poison, must be invented—a task the magnitude of which can only be conceived when we realize how inadequate are our means of investigation, and how complex and elusive the substances to be examined. Let us, however, see what has been accomplished. First, let us examine what has been ascertained regarding the metabolic products of bacterial life.

Simple mention, without further discussion, may be made of some of the more familiar products, of subordinate importance from a pathogenetic standpoint. Such are carbonic acid, ammonium carbonate, the various fatty acids, and other products of fermentation and putrefaction, such as alcohol, various offensive gases, indol, skatol, trimethylamine, and the like. Of more importance are the various ferments that, independent of the bacteria themselves, are able to bring about striking chemical changes, and which are comparable to the digestive ferments, like pepsin and trypsin. It is possible, and even not improbable, that some of the deadly poisons to be referred to later may accomplish their work in a similar way.

Another class of substances, discovered in late years, and of immense importance and practical interest, are the leukomaïnes and ptomaïnes. Leukomaïnes are substances elaborated by bacteria, possessing certain distinct chemical characteristics, by which they can be arranged in a class by themselves. They are basic, form with acids crystalline salts of a definite composition, and give the chemical reactions of the alkaloids, and are similar in every way to the alkaloids of vegetable origin, such as quinine, morphine, atropine. Ptomaïnes is the term applied to such leukomaïnes as possess poisonous properties; and, in fact, certain of the ptomaïnes are among the most intensely poisonous substances known. Ptomaïnes are produced not only by pathogenic bacteria, but also by bacteria outside of the system, which, when introduced directly into the system, are harmless saprophytes. Such bacteria thrive in decomposing meat, fish, milk, and the like, and the poisonous qualities of the ptomaïnes generated therein have been only too often demonstrated by involuntary physiologic experiments. It is worthy of note that these substances are usually produced in the first stages of change, even before the meat may have developed that *haut gout* which some tastes demand, and are all the more dangerous on this account. As a familiar example of such ptomaïnes may be mentioned tyrotoxicon, which has been found in ice-cream, and has occasioned the development of severe toxic symptoms on various occasions. Further, it is probable that in the intestines substances of a similar nature are produced, and the absorption of these and other toxic bodies of like origin is in all probability the chief factor in producing the symptoms of cholera infantum, and,

when the invasion by a specific organism occurs, the symptoms of cholera Asiatica. In another class of cases, in which the microphyte effects its entrance directly into the organism, and grows and multiplies either in a limited portion, or generally diffused throughout the fluids and tissues of the body, ptomaïnes, or as they are more frequently termed under these circumstances, toxines, play a certain part in preventing the development of specific symptoms. Thus, in tetanus one of the active principles is a toxine called tetanine. This was first discovered, obtained in a pure state, and studied in reference to its toxic properties by Professor Brieger, of Berlin, to whose investigations our knowledge of ptomaïnes, as well as of toxalbumins, to be mentioned later, is principally due. Having thus discovered tetanine, and studied its properties by experiments on animals, he was able to demonstrate its presence directly in the arm amputated from a man affected with tetanus, and thus for the first time prove the occurrence of toxines in the human body.

The property of crystallization of the ptomaïnes and toxines greatly facilitates their investigation. It renders possible the isolation of these bodies in a chemically pure condition, and the study of the physiologic action of the pure substance. They can be analyzed, their empiric and rational formula can be fixed, and their chemical relations ascertained. Thus, for instance, cadaverin and putrescin, the names of which indicate sufficiently their places of occurence, have been found to be penta-methylene-diamine and tetra-methylene-diamine, respectively. It is not inconceivable that some of these bodies, or variations of them, may be found to possess therapeutic value.

The next group of substances that recent investigation has discovered among the metabolic products of bacterial life is one that has excited the keenest interest on all sides, for these seem to represent the specific poisons of various infectious diseases. They were termed toxalbumins by Professors Brieger and Fränkel, who were the first to isolate them and recognize their nature, and our knowledge of them only dates back to March, 1890, when the results of their researches were published. The name indicates their relation to the group of albuminous substances, and, at the same time, suggests the difficulties necessarily attending their investigation. As opposed to the crystallizable ptomaïnes and toxines, we have colloid, amorphous substances, which give certain of the reactions of the albuminoids, and which are exceedingly difficult to separate from one another, and to obtain in an approximately pure state. They appear, many of them, to be extremely unstable, and to break up during the ordinary and most careful manipulations. And it is doubtful whether the substances so far obtained, representing the purest and most active preparations, may not be largely composed of inactive albumoses, to which small amounts of the really active principle are either chemically or simply mechanically attached. This is one of the many problems awaiting solution by future investigators.

In the researches of Brieger and Fränkel already referred to, special attention was devoted to the specific poison of diphtheria. They succeeded in isolating a toxalbumin which, introduced into the system of guinea-pigs and rabbits, produced the same effects that Roux and Yersin obtained from the sterile infiltrate containing the various products of the vital activity of the Klebs-Löffler bacilli. This toxalbumin has been further studied by Wasserman and Proskauer, in the Institute of Hygiene in Berlin, and the results of their investigations were published in the *Deutsche med. Wochenschrift* last April. A description of the methods employed, and the results obtained, will give a very good idea of the present work in this line. The diphtheria-bacilli are cultivated in ordinary meat-water bouillon, with the addition of 1 per cent. of peptone and ½ per cent. of salt. Cultures about three weeks old were filtered through porcelain filters, and the filtrate, of which the absolute sterility had been determined by further tests, was concentrated to about a tenth of its volume, in a vacuum evaporator, at a temperature of about from 27° to 30° C. This concentrated filtrate was then freed as far as possible from peptones and globulins by dialysis with distilled water three times for twenty-four hours each time. The peptones and globulins thus obtained were found to be non-poisonous. The fluid remaining behind in the dialyzer was filtered until it was clear; to the clear filtrate thus obtained was added ten times its bulk of from 60 to 70 per cent. alcohol, and then allowed to stand twenty-four hours. This was then filtered, and the precipitate which had formed was collected on a filter. The diluted alcohol, being allowed to drop into absolute alcohol, gave a precipitate which, having been found harmless, we will ignore. The other precipitate which had been produced by the diluted alcohol, and then collected on a filter, was dissolved in a small amount of water, and the solution then treated with double the amount of a saturated solution of ammonium sulphate, to free it from peptones. The precipitate thus formed was re-dissolved in water, freed by dialysis from the ammonium sulphate, and then again treated with absolute alcohol. This procedure of dissolving in water and precipitating in alcohol was repeated until the solution in water was perfectly clear, whereupon it was again precipitated by means of the alcohol, and the precipitate thus obtained was dried at 37° in vacuo. The substance thus obtained was a fine white powder, perfectly soluble in water,

and the solutions gave the typical reaction of the albuminous substances.

The injection of 10 milligrams, *i. e.*, $\frac{1}{6}$ grain, of this substance caused the death of rabbits in from three to four days; of 5 milligrams, in two weeks; of 3 milligrams, after more than three months. The long time required before the death of the animals is very striking; they were sick during the whole period, wasted away, took little food, and often developed paresis of the extremities before death. Further experiments were conducted by the same authors to ascertain whether they could find the same substance in animals inoculated with the bacilli. In this they were also successful. In the bodies of rabbits that had succumbed to this infection, they could, by the same methods, obtain a similar white powder, which, however, proved even more virulent than that from the cultures, for 0.2 milligram, *i. e.*, $\frac{1}{300}$ grain, injected in a vein of the ear caused the death of a rabbit in fourteen days, with the development of the most typical symptoms of diphtheria in animals.

By similar methods Brieger had obtained a toxalbumin from the anthrax-bacillus, which caused the death of animals with the same symptoms as in those inoculated with the bacilli. And Immerwahr, in a communication last July, reports his experiments with a toxalbumin obtained from animals inoculated with the tetanus-bacillus, and further relates that he succeeded in isolating the toxalbumin from the leg amputated from a man suffering with lockjaw, and with it had inoculated five guinea-pigs, all of which died within forty-eight hours, developing typical tetanus.

Another class of albuminous substances of a poisonous nature is found among the peptones. Even the peptones resulting from normal digestion, when introduced directly into the circulation, were proved by Woolridge and Schmidt-Müllheim to act as poisons, and it seems that these, in passing through the intestinal epithelium, undergo modifications necessary for their further utilization. Some years ago, Brieger obtained from peptones a body possessing actively poisonous properties, which he called peptotoxin, but the fact remained isolated. In an article in the *Deutsche med. Wochenschrift*, of December 31, 1891, Hueppe gives an account of his work with the cholera-bacillus, and describes a body obtained from cultures of it under certain conditions, possessing all the properties of a peptone, and which apparently is the specific poison of cholera.

Allied to toxalbumins, but differing from them in certain respects, is another class of albuminous substances, about which comparatively little is as yet known. These substances, which are likewise poisonous, are not destroyed by high temperature—sometimes they will even stand repeated boiling. In certain cases, at least, they seem to be the active principle of vaccines that confer a more or less lasting immunity.

These various substances so far referred to, concerning many of which our knowledge is yet so limited, are all metabolic products of the vital activity of the bacteria. In addition to this, there is evidence that the dead bodies of the bacteria themselves, as distinguished from the metabolic products of the living bacteria, exert a certain influence on the tissues in which they lie. Thus, Buchner, having subjected cultures of various bacteria to prolonged boiling, separated the dead bacteria from their products, and, having treated the former with dilute caustic potash, obtained proteid substances that possessed marked chemotactic properties, and on injection into animals, brought about reactive inflammation, and even extended suppuration. Likewise, Prudden and Hodenpyl of New York, in their extremely interesting and able papers, in a series of skilfully and carefully conducted experiments along the same lines, have shown that when dead tubercle-bacilli, freed from all their metabolic products, are introduced into the circulation of rabbits, they excite at the place of lodgment a proliferation of the connective-tissue cells in the form of small nodules made up largely of epithelioid cells, and resembling exactly small miliary tubercles, but differing in the very important particular that they show no inclination to necrosis, caseation, or other degenerative changes, but do show a decided tendency toward conversion into connective tissue. In other words, the changes brought about are those that play an active part in spontaneous recovery from tuberculosis.

Having arrived here in our discussion, it seems a proper point for the consideration of Koch's tuberculin, although we are still ignorant of its actual nature. Probably, as at present constituted, it includes various of the substances already enumerated. Tuberculin is obtained from pure cultures of tubercle-bacilli, by extracting with a 4 per cent. glycerin solution, concentrating on a water-bath to, say, a tenth of the original volume, and then filtering. The strength is determined by physiologic experiment on guinea-pigs. Perfectly healthy animals are not greatly affected by moderate doses. Those, however, that have been rendered tuberculous by inoculation eight or ten weeks before, and have reached an advanced stage of tuberculosis, are extremely susceptible, and when a certain dose is reached, die in from six to thirty hours. Their dead bodies show certain characteristic appearances, by which their death can be shown to be due to tuberculin, and other accidental causes can be excluded. As most characteristic, Koch mentions the constant occurrence of numerous small hemorrhagic

spots, or ecchymoses, on the surface of liver and spleen. The strength of the tuberculin is so graduated that 0.5 gram is just sufficient to kill tuberculous guinea-pigs. After a long series of experiments, Koch has succeeded in obtaining from tuberculin a substance that is fifty times stronger, and which he regards as the active principle in an approximately pure state. This is a grayish-white amorphous powder, soluble in water, and giving various reactions of the albuminoid substances. Koch considers it as belonging to a class of albuminoids differing from any yet known, and believes that homologues will be found among the products of other pathogenic bacteria. The purified tuberculin thus obtained differs in no respect in physiologic action from the crude tuberculin, and thus Koch's hopes that a preparation might be found retaining the curative properties, and free from the other and evil effects, have not been realized. On the other hand, Klebs, of Zurich, who has been working on tuberculin supplied him by Koch, believes that he has accomplished this task. He claims that the evil effects of tuberculin, the violent systemic reaction, the fever, the necrosis, are due to the ptomaïnes contained in tuberculin, and that, by treating it with certain reagents that free it from these, he has found a substance that will bring about the destruction of the bacilli. According to him, patients treated with this purified tuberculin, which he calls tuberculocidin, improve rapidly, the various symptoms tend to disappear with remarkable promptness, the bacilli break down, lose their staining properties, and finally disappear. It will be noticed that the very point that, for Koch, is the test of the activity of his preparation—that is, the toxic effect on guinea-pigs—Klebs attributes to the action of ptomaïnes, and seeks to avoid. On the other hand, Koch evidently has no faith in the results claimed by Klebs, and believes that the substance obtained by the latter is merely an inert albumose. Prof. Klebs is a distinguished pathologist and bacteriologist, and a fuller description of his work and his therapeutic experiments will be looked for with great interest, especially as certain British investigators, particularly Hunter, have arrived at similar views respecting the constitution and action of tuberculin. But the evident skepticism of Koch, and of Brieger, who has been aiding Koch, together with the disappointed expectations attaching to tuberculin hitherto, certainly will moderate the hopes that Klebs's announcement might otherwise have excited. On the other hand, it must be emphasized that tuberculin is by no means the utter failure that many are inclined to assume. It has been conclusively proven that it has the power to arrest tuberculosis in guinea-pigs and rabbits; and even in human beings evidence is not wanting of a curative power, although this, in the majority of cases, is more than counterbalanced by its destructive effect as ordinarily used. I am convinced we have reason to hope that the untiring zeal of the many investigators now seeking the solution of this problem will discover the modifications or the changed conditions necessary to accomplish in man the results obtained in the animals mentioned.

The non-realization of the expectations raised on the introduction of tuberculin tended to bring about a certain reaction, and in the minds of the unthinking to cast discredit on the etiologic connection of tubercle-bacilli with human tuberculosis. And yet reflection must show, on the contrary, that it would really be an additional link in the chain of evidence, were such necessary. Comparatively large doses are borne by healthy individuals, or by those suffering from other diseases, without great discomfort; and yet in individuals in whom there is even the beginning of tuberculous trouble, minimal doses bring about a violent reaction. What could more plainly establish the peculiar relation between this product of the growth of tubercle-bacilli outside of the body and tuberculosis of the human subject?

Tuberculin is, in many senses, a remarkable substance, and particularly so in its elective action on tuberculosis. Recently, however, Kalning, in Riga, succeeded by the same process in extracting from the glanders-bacillus a similar substance, which, injected in healthy horses, had but little effect; but in horses affected with even the first beginning of glanders, caused a violent reaction. Kalning was a martyr to his scientific zeal, for he died from glanders contracted in his studies; but his work was continued by others. The substance called mallein has been shown to be an invaluable reagent for the detection of glanders in its earliest stages, and offers a valuable means for stamping out this disease.

We have up to this time considered the one side of one subject—the bacterial side. But bacteria are not the disease, nor are the agents with which they accomplish their effects on the organism the disease. The reaction of the diseased individual corresponds more properly to this conception, and the organism affected demands our attention, if we are to properly discuss the subject. Do not let the bacilli make us forget the cell, was the timely warning of Virchow, the creator of cellular pathology. And attention having been turned in this direction, many remarkable facts have been brought to light by recent investigation. I fear I have already exceeded the appropriate limits of a paper for this occasion, and I shall not be able to do justice to this side of the question. The subject of chemotaxis, and its importance, is very clearly treated in the papers of Prudden, already mentioned; and in

the Croonian lectures delivered by Burdon-Sanderson the same subject is discussed, and likewise Metschnikoff's doctrine of phagocytosis—a doctrine that, by the way, in crude outlines appears to have taken a vigorous hold on the lay imagination, but the importance of which seems greatly lessened by recent investigation. Of much greater importance is the toxic power that the blood has been shown to possess on most forms of microphytes. It is a singular circumstance, and one suggestive of the all-absorbing power of certain directions of research, that this fact, although known for some years, should not sooner have excited the interest of investigators that its importance deserved. In the last three or four years, however, many remarkable and important facts have demonstrated that just here lies the field for the practical application to therapeutics of the knowledge accumulated by bacteriologic research. It has been shown that blood has a directly destructive effect, not only upon most pathogenic organisms, but also upon their toxic products; it was next demonstrated that this power resided in the serum of the blood as opposed to the morphologic elements; and, finally, that it was due to certain proteid constituents of the serum, as yet not more definitely known. Thus, in the struggle for existence, the organism combats the microphytes with their own weapons.

It has been shown that the destructive action of the blood on these parasitic organisms is decreased by conditions of malnutrition and by surroundings unfavorable to the most healthy development. Here we have what suggests the *rationale* of our modern treatment of pulmonary tuberculosis. By improving the nutrition and placing the patient in the most favorable hygienic conditions, we increase the toxicity of the blood for the tubercle-bacilli. It has been further ascertained that the blood is not equally toxic for all microbes, and that the blood of different animals differs in this respect; in certain animals it is toxic for certain pathogenic bacteria, which are not affected or are influenced in a less degree by the blood of other animals. And this brings us to the subject of immunity. Why are some animals affected by certain diseases from which others are exempt? Why are individuals who have passed through certain diseases immune from these diseases for the future? Why does inoculation of man with a certain disease of the cow render him less susceptible to a disease that otherwise might attack him? We may now confidently assert that this is due to a certain constitution of the blood.

I should like to call your attention to some of the facts relating to this subject. In considering a problem, all that simplifies facilitates a solution. From this point of view a very brief description of a few recent experiments by Ehrlich, to whom we owe so much suggestive work, is, I think, adapted to throw some light on this subject. The difficulty of obtaining bacterial toxalbumins in a pure state and in sufficient quantity suggested to Ehrlich the idea of taking toxalbumins of vegetable origin, of which recent pharmaceutic research has discovered a number. One of these—ricin—the toxalbumin of castor-oil beans, is an intensely poisonous body, of which, judging from experiments on animals, 3 grains would be sufficient to kill an adult man. Guinea-pigs are so peculiarly sensitive to this poison that 1 gram, *i. e.*, 15 grains, would be sufficient to kill 1,500,000. Ehrlich took as the subject of his experiment white mice, and by feeding them very small doses, and then increasing the dose and injecting it hypodermatically, he was able in twenty-one days to inject four hundred times the amount of the dose originally poisonous, and later to increase it to one thousand. In other words, the mice had acquired a certain immunity to the poison. Now comes the suggestive point. Ehrlich has ascertained that by mixing ricin-solution with five times its amount of the blood of animals possessing a high degree of immunity, the ricin loses its toxicity and causes no symptoms when injected into animals. Further, by injecting the blood of white mice rendered immune into the body of other white mice, he was able to confer a considerable degree of immunity, viz., forty times the original. The inevitable inference from all this is that the blood of immune animals must contain a substance that neutralizes and probably destroys the poison. This is likewise probably the explanation of the earlier experiments of Salmon and Smith, in this country, who were able to obtain immunity in pigs against pig-typhoid, by inoculating them with sterilized cultures of the specific microphyte; and of Chamberland and Roux, who rendered guinea-pigs immune from anthrax, or splenic fever, by filtering cultures of the anthrax-bacillus, and injecting the sterilized filtrate. In a more elaborate and systematic series of experiments, Behring and Kitasato have shown, in reference to tetanus and diphtheria, that it is possible with the sterile filtrate from cultures of these bacilli to render animals insusceptible to these diseases; that the blood of animals rendered insusceptible neutralized the poison of the toxalbumins; and that when the blood of immune animals is introduced into susceptible animals, the latter acquire immunity. And, further, the most suggestive point was their success in thus rendering guinea-pigs immune with the blood of immune rabbits, or, in other words, the transference of immunity from one species of animals to another. And Behring further alludes to certain results obtained, not as yet made public, indicating the possibility of isolating the active principle, or obtaining

it in a concentrated form. As, in diphtheria, the substance instrumental in bringing about the immunity seems, according to some recent investigations of C. Fränkel, to be a harmless albumose, the practical significance is almost startling.

That there is in the blood of immune animals a substance that may be termed an antitoxine, seems, in accordance with all of these investigations, established beyond doubt. This antitoxine is probably gradually developed, and only when it reaches a certain strength is the inhibitive effect apparent; but in certain diseases it would seem that when it reaches this point the effect is very rapid. Such is the case in diseases that terminate by a crisis, as pneumonia. And it is interesting to know that in pneumonia G. and A. Klemperer, of Berlin, claim that by the injection of from 4 to 6 c.c. of serum, taken at the time of the crisis, from rabbits inoculated with pneumonia-cocci, they are able to produce a critical fall of temperature in patients suffering from pneumonia.

Even more definite is the use of the antitoxine of tetanus, as described by Dr. Schwarz, assistant at the surgical clinic at Padua. He reports the cure of a boy, suffering from traumatic tetanus, by the injection of the antitoxine prepared from animals by Tizzoni and Cattani, and refers to three other cases treated by other Italian physicians with the same successful result.

I have attempted in the foregoing to give a rough outline of the present state of bacteriologic research in reference to disease, and to indicate some of the currents now agitating it. When we consider that, so far, our studies have been solely with the bacteria, and practically with only one division of these —the schizomycetes—we can recognize how much remains to be done. In only two diseases—malaria and dysentery—have organisms belonging to a higher form of life—the plasmodium and the ameba coli—been shown to be the probable cause, and our knowledge of these is of the scantiest. Until the plasmodium has been successfully cultivated outside of the body, little can be known of its biologic properties; and, as it is now considered probable that various other diseases—notably, the acute exanthemata—are due to similar organisms, our knowledge of the causation of disease presents great gaps. But what we have recently learned is immense in its suggestiveness, and the prospect opening before us of achievements in therapeutics, and the control of disease, of knowledge of the subtle processes of life, and the intimate mysteries of Nature, must, with increasing force, appeal to our imagination, rekindle our faith, and redouble our enthusiasm for our most peculiar and noble calling.

Carl Credé, the distinguished gynecologist and obstetrician, died recently at Leipzig, aged seventy-two years.

A COLLECTIVE INQUIRY CONCERNING INTUBATION.

By RICHARD B. FAULKNER, M.D.,
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Intubation in diphtheria is not viewed with favor by most authorities. H. R. Wharton does not think intubation will supersede tracheotomy in diphtheria, and he thinks that it is not being as widely employed in these cases as it was a year or two ago. N. Senn does not approve of intubation for diphtheritic or any other form of septic laryngitis. Hunter McGuire says: "I have never tried intubation of the larynx in diphtheria. I have never heard of its being done in or about this city that the patient did not die. I had rather myself resort to tracheotomy."

To the question: Do you think that intubation will be able to hold its own as a resort in diphtheria? D. Hayes Agnew answered tersely, "I do not;" Thomas G. Morton, "No;" H. Tuholske, "I do not think so;" Louis Starr, "Not in severe cases;" John Ashhurst, Jr., "It will never supplant tracheotomy, and I am disposed to think that it will be less often resorted to in the future than it is at present;" A. C. Bernays, "I do not think that intubation will prove successful in diphtheria;" R. W. Lovett, "I do not believe that intubation will hold its own when contrasted with tracheotomy in severe cases of laryngeal diphtheria;" C. H. Mastin, "It has not stood the test, and I am certain it will fall into disuse. It has always appeared to me as a most unsurgical procedure, and one that I have always opposed."

The first strong criticism of intubation was by Symond (*Brit. Med. Journ.*, November 19, 1887), following the article of Macewen (*Brit. Med. Journ.*, July 24 and 31, 1880), the first of the present revival of the operation. In the late (third) edition of his work on *Operative Surgery*, Stephen Smith describes the operation of intubation, but refrains from any comment upon it. Dillon Brown (*Boston Med. and Surg. Journal*, 1891, page 437) is quoted as saying that "many of the tubes in use are badly constructed." In the ordinary tubes an artificial epiglottis introduces fresh sources of danger. Three sets of tubes are described: six for children, ten for adults, seven of large caliber for foreign bodies and false membranes.

The perplexities of the technique are well described by G. W. Gay (*Comparative Merits of Tracheotomy and Intubation*): "In young children the space in which the necessary manipulations take place is limited; the larynx is small, deep, and movable, and made more so by the struggles of the patient. If the parts are extensively infiltrated and thickened it is by no means easy to determine the different structures by touch." Extraction of the tube is even more diffi-

cult than introduction. Fifteen cases of permanent lesion, from laceration of the larynx during extraction, occurred in the practice of J. M. Bleyer alone within two years. Two cases of perforation of the laryngeal wall occurred in the practice of Joseph O'Dwyer, as related by Gay.

The glottic aperture varies greatly in children of the same age, and it is at times impossible to select a tube of the proper caliber. Hence, occasionally, the tube falls into the trachea and bronchi. In a case reported by Moll (*Annual Assembly of Belgian Laryngologists*, May 17, 1891), the child died from a tube becoming buried in the trachea. In another instance, in the practice of Bleyer, in the latter part of November, 1891, the tube fell into the trachea during an attempt at extraction, and was removed by tracheotomy, performed by Frederic S. Dennis. In two cases reported by Prescott and Goldthwait (*Boston Med. and Surg. Journal*, December 31, 1891), "the tubes were drawn into the bronchi." Both patients died. The presence of the tube diminishes greatly the normal caliber of the glottic aperture.

The death-rate in diphtheria in epidemics of average severity is 10 per cent. Three deaths of every four are occasioned by diphtheritic sepsis or exhaustion, the remaining one by diphtheritic laryngeal stenosis (Jacobi, monograph on *Diphtheria*, 1880). Accordingly, a quarter of 10 per cent., that is, 2½ per cent., of the whole number of cases admit of resort to intubation. O'Dwyer's claim of 29 per cent. of recoveries from intubation, means 29 per cent. of this 2½ per cent. Two and one-half per cent. being the number admitting of operation, it therefore requires forty cases of diphtheria to furnish one of stenosis. Based on this calculation, the fifty intubations performed in this (Allegheny) city, within the past six months, required 2000 cases of diphtheria. In 1890, Jacobi (*Internat. Med. Congress*, Berlin; paper "On Diphtheria in America") stated that the death-rate from membranous stenosis is not nearly so great as in 1880. Therefore, the number of cases now required to furnish fifty intubations would be considerably more than 2000.

Lennox Browne, in the recent (third) edition of his classical work on *Diseases of the Throat*, has written: "It is probable that, the laryngeal mirror not having been used in the majority of cases for the purpose of forming an exact diagnosis, the operation may have been performed for mere spasm."

F. E. Waxham uses the laryngoscope, in adults, to place and to extract the tubes. He says: "When done by one who is not an expert, intubation is the most brutal and unsatisfactory operation ever devised by man." Bleyer (*Internat. Med. Congress*, Berlin, 1890, "Report of 512 Intubations") states that "I cannot dwell too strongly upon the necessity of a forced or normal laryngoscopic examination before entering upon the operation." Without laryngoscopic examination it may, at least, be urged that the condition of the larynx is not proven. In Chicago, intubation is in the hands of laryngologists, and especially Ingals, Casselberry, and Waxham. The same holds true in Louisville—Cheatham, Pusey, Ray, and Dabney doing the work. Also in St. Louis the same rule holds true.

O'Dwyer has written that "The dangers of intubation are almost *nil*, but only so in the hands of an expert, and experts are not made in a week, or a month, or even a year—in fact, there are very few yet in existence. That intubation is easy is one of the delusions that still exist in regard to the operation." In the course of a debate upon intubation I heard a gentleman remark that "It is just as easy to pass a tube into the larynx as it is to pass a catheter into the urethra." As a comment upon that remark, Dr. O'Dwyer says that "Comparing intubation to catheterization of the urethra is nothing less than a crime, because it encourages everyone who has a case of croup to try it, often with the result of choking his patient to death."

In my neighborhood, lately, a child died and was buried with an intubation tube in its throat. I learned, later, that it was the common thing for those who died after intubation, to die and to be buried with the tubes in their throats. Popularity of intubation must be viewed with the gravest apprehension. The operation is dangerous, difficult, inferior to tracheotomy, and can never be depended upon. In many instances it is the literal truth that "life hangs by a thread." And when between this life and eternity a mere thread, any strand of which may be imperfect, is all that the surgeon can interpose, it shows the utter prostitution and the absurd extremity in the application of a noble art. No other operation seems, *à priori*, so in conflict with common sense. In the hands of the inexpert—and in this era of cheap medical colleges be it remembered that that genus is multiplying rapidly—the practice of intubation is the practice of manslaughter.

1. Under what circumstances occurring in diphtheria do you consider intubation necessary?

J. Lewis Smith: When there is that degree of dyspnea that the child is restless, and the suprasternal and infra-sternal regions recede during respiration.

2. In that class of cases in which tracheotomy has been considered appropriate, do you believe intubation to be a proper substitute?

J. Lewis Smith: It is a proper operation, and if the dyspnea is not relieved by it, or if it returns,

the presence of the tube does not prevent the subsequent performance of tracheotomy. E. F. Ingals: In all children under five years of age. J. Solis-Cohen: Not as a rule.

3. Do you think that in cases of diphtheritic membranous exudation we should always be prepared to perform tracheotomy?

Charles McBurney: Unquestionably. Waxham: Yes. Gay: Intubation should not be undertaken without having the facilities for tracheotomy at hand. O'Dwyer: Those with only a limited experience with intubation should be always prepared to do tracheotomy.

4. Is there, briefly, any serious objection to the performance of intubation which exists always in every instance of diphtheritic laryngeal stenosis, either inflammatory or membranous?

J. Lewis Smith: No; if the obstruction to the respiration causes suffering to the child, or any notable dyspnea. Ingals: No, providing it is done skilfully. Waxham: The difficulty of performing it. J. Solis-Cohen: Yes; the presence of pseudo-membrane, which may crowd down in front of the tube and occlude it. The absence of an attendant competent to remove the tube promptly in an emergency. Gay (This answer is interpolated chiefly from his article on the "Comparative Merits of Tracheotomy and Intubation"): Accidents are less common after tracheotomy than after intubation. While intubation is a most valuable operation, it is not so free from objections and complications as some of its advocates would lead us to suppose. It may not relieve the dyspnea; the tube may "gum;" may become suddenly occluded, and unless quickly ejected or removed, death will ensue; and there may be great difficulty in feeding the patient.

5. What do you consider the greatest objection to intubation in diphtheria?

D. Hayes Agnew: The probability of displacing false membrane and blocking up the air-passages. J. William White: Pushing membrane in advance of the tube; difficulty of feeding; plugging of the tube. John Ashhurst, Jr., C. B. Nancrede, Gay, Goldthwait: Difficulty of feeding. Wharton: Pushing membrane in front of the tube; difficulty of feeding. Louis Starr: The difficulty of feeding and the liability of food, especially liquids, entering the trachea through the tube and inducing pneumonia. The risk of the tube slipping into the trachea, or being coughed up and swallowed. The frequent non-success of intubation, subsequent tracheotomy becoming necessary, hence dangerous delay. Cheatham: A false passage; pushing of membrane; ulceration of larynx and trachea from pressure; food pneumonia. T. F. Prewitt: Pushing down of a mass of exudation into the trachea. H. Tuholske: Displacement of membrane; mechanical and continuous insult to part in a state of intense inflammation. C. H. Mastin: I am perfectly certain that the presence of the tube, in glottis and larynx, adds to the local irritation and favors ulceration. William Porter: The tube acts as a foreign body in a larynx already inflamed by disease. The current of air entering the lungs continues to pass through diseased channels. Henry H. Mudd: I believe it is a relief to the child and to the diseased throat to have the air come through the trachea tube, rather than through the diseased pharynx; difficulty of feeding. P. S. Conner: Difficulty in introducing tube; the danger of its slipping down, or being coughed out. R. W. Lovett: In contrasting intubation with tracheotomy the striking point is that when a tracheotomy tube is in place there is a tremendous discharge from it of mucus, pus, and detritus, which is continually coughed out. In intubation cases, there is little of this. It seems reasonable to suppose that this is because it is not raised so easily, and is drawn more into the lungs and bronchi in intubation cases. This seems to me a great practical objection to intubation. It has seemed to me that the percentage of pneumonia was high in the intubation cases that I have watched. In certain cases a dangerously rapid tracheotomy is necessitated by attempts to intubate. In my own experience, twice in the last month, after a careful intubation, the child has stopped breathing as soon as the tube was put in, and instant tracheotomy has been necessary to save life.

6. In desperate cases of diphtheria, accompanied by laryngeal membranous exudation, would you justify the resort to intubation equally or preferably to tracheotomy?

O'Dwyer: The only justification for tracheotomy as a primary operation, is the absence of some one competent to do intubation. Joseph D. Bryant, Cheatham, Waxham: Preferably. Smith, Ingals, Goldthwait, Gay, Bleyer, J. Ewing Mears: As a primary operation. D. Hayes Agnew: No; would resort to tracheotomy. Louis Starr: Tracheotomy; decidedly. John Ashhurst, Jr.: No; prefer tracheotomy. I feel that the patient is safer with a tube introduced through an opening below the larynx, than with one passing through the larynx itself. Lewis A. Stimson: My preference is wholly for tracheotomy. W. T. Bull: In a general way I have formed the conviction that intubation is not suitable for the grave cases. Charles McBurney: My experience is more with tracheotomy. J. William White: Do not consider intubation equal or preferable to tracheotomy. C. H. Mastin: I would not resort to intubation. I cannot convince myself that it is a judicious or proper operation. Tracheotomy is a rational operation. Tuholske: Tracheotomy is vastly superior to intubation. Wharton:

No; decidedly tracheotomy. T. F. Prewitt: Tracheotomy; decidedly. J. Solis-Cohen: All the cases in which tracheotomy is indicated do not do as well as by intubation. Thomas G. Morton: My experience with intubation has not been favorable. John B. Roberts, William Porter, John H. Brinton, A. C. Bernays, C. B. Nancrede, Henry H. Mudd, C. G. Jennings, Ernst, and Sajous: Prefer tracheotomy. R. W. Lovett: Much prefer tracheotomy. If I may quote from our Boston City Hospital figures, up to 1887 the recovery under tracheotomy was 29.05 per cent. in 327 cases. In 392 cases of intubation since that time the recovery is 20 per cent. and a fraction. As these two groups of cases were of the same class, treated in the same institution, by the same surgeons, for the most part, they give ground for the suspicion that in desperate cases tracheotomy saves more lives. My personal experience accords with these figures. ("The Boston City Hospital affords the best opportunity for the study of croup to be found anywhere in this country. When you shall have accumulated the same number of intubations that you have had tracheotomies, it will settle the question of the comparative merits of the two operations in saving life better than thousands of cases collected from other sources." J. O'Dwyer, as quoted by G. W. Gay.) In the comparison, while tracheotomy leads intubation by 9 per cent., observe that intubation starts with an advantage of a higher gross number on which to compute. Up to September 20, 1888, tracheotomy led intubation by only 5 per cent., in 327 tracheotomies, as against 107 intubations. Conant (*Boston Med. and Surg. Journal*, December 31, 1891): I have felt that intubation, which at the time it came out was claimed to have a percentage very much larger of recoveries than tracheotomy, was a thing which later on would prove to be fallacious, and the more cases of intubation that are reported the less has grown the percentage of recoveries. The recoveries from intubation are growing proportionally less every year at the Boston City Hospital. Up to January, 1890, the per cent. of recovery was about twenty to twenty-five, and then it fell to fifteen (Prescott).

A. Jacobi has abandoned tracheotomy. He has not performed intubation. From his plain talk (*Internat. Med. Congress*, Berlin, 1890; paper "On Diphtheria in America") it is evident he thinks more of mercurials than of intubation. "I learned that when the constitutional effect of mercury could be obtained speedily, cases of fibrinous tracheobronchitis got well in an unexpected manner." "During the last six years preceding 1888, I have seen no less than 200 cases, and amongst them recoveries have not been rare. In the practice of no less a man than O'Dwyer, I have seen two cases of general and laryngeal diphtheria in the same family which got well without any operative procedure." "I have never seen so many cases of tracheotomy getting well as between 1882 and 1886, when the bichloride was constantly used as detailed." "The beneficial effects of mercury are not limited to cases of stenosis, but apply also to those of sepsis." These remarks of Jacobi can be applied to the practice of many physicians in this community. I am gratified to add my testimony to his, for I know of cases of diphtheria now getting well under the mercurial treatment, small doses often repeated, to make the percentage of recovery from membranous laryngitis greater than ever before.

HYDATIDIFORM MOLE, WITH REPORT OF A CASE.

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THE etiology and pathology of the so-called hydatidiform, or vesicular, mole is a subject that has always attracted the attention of the medical profession. In the infancy of the science of obstetrics it was believed that if the parts of the embryo and secundines were not separated and distinctly formed from the mixture of male and female semen, they formed a mass that, when discharged before the fourth month, was called a "false conception;" if it continued longer in the uterus, it was denominated a *mola*. Another theory advanced was that the growth was independent of conception, and was, in fact, a true hydatid, or acephalocyst, such as is formed in the liver, spleen, and other organs. In this connection Rokitansky (*Pathological Anatomy*) says: "Cysts are very rarely formed in the uterus; we have not met with a single example in Vienna, and I myself have only inspected one case of uterine acephalocysts."

The admission of this one case by such an authority is sufficient to establish the possibility of the occurrence, and raises a point of some considerable interest from a medico-legal point of view. To Cruveilhier is assigned the credit of first demonstrating that the hydatidiform mole is not due to echinococci, but is, in fact, a degenerated ovum. Velpeau traced the origin of the degeneration to the chorion, while the observations of Professor Robin showed that the envelope of the cysts is identical with the external membrane of the chorionic villi. The accepted theory of pathologists now is that the process is a proliferative degeneration of the villi of the chorion, and a hypertrophy of their investing epithelium and connective-tissue cells, which undergo mucoid degeneration. The pathology being such, it is to be regretted that this antiquated misnomer still clings to the affection,

and that it has not received a title more in accord with the process involved. Search for the primary cause of this degenerative process opens up a wide and interesting field, and one in which but little information can be gained.

Since the abandonment of the echinococcus as a causative agent, various theories have been advanced. Dr. Graily Hewitt (*Obstetrical Observations*, London) claims that the source of the evil is fetal, and not maternal; that instead of chorial disease causing disintegration of the fetus, the death of the fetus causes degeneration of the villi. This view of the case is supported by the clinical fact that in the case of twins one ovum may undergo degeneration, while the other may go on to full term, and a healthy, full-sized child be born. The contention, which if established would appear to support this view, that a retained portion of the placenta may undergo a similar degenerative process, has been disproven by clinical observation. Opposed to this theory, again, are the observations of M. Brechet, as quoted by Cazeaux (*Theory and Practice of Obstetrics*), who reported a case in which a few hydatidiform vesicles occurring on the placenta did not prevent the birth at term of a normally formed child of the usual size. The view perhaps most generally accepted, however, looks to a maternal influence as the causative agent, and this influence is thought by the greater number of observers to be the syphilitic or the carcinomatous dyscrasia. Lusk (*Science and Art of Midwifery*) says: "That the exciting cause of the hydatiform mole may be a morbid maternal condition is rendered probable by the repeated recurrence of the disease in the same patient, by its coëxistence with inflammatory decidual disease, or with extensive uterine fibroids. It has been found to be most frequent in aged and multiparous subjects."

The probable causes cited do not seem to me to account for the following case:

H., an imbecile, twenty-two years of age, unmarried, was admitted to the State Hospital for the Insane on September 28, 1891. At the examination, on admission, her temperature was found to be 98.5° F.; pulse, 84; tongue clean; and bowels regular. The patient was well-proportioned, and apparently in good physical health. There was no history of syphilitic or carcinomatous disease; a maternal aunt had died of pulmonary tuberculosis. Previously to admission, menstruation had been regular, and her general health good. She had led an immoral life, but had never conceived. A month after coming to the hospital she complained of "dyspepsia," with vomiting. Remedies directed to this indication soon relieved the symptoms. An attack of dysentery, which she had at this time, having left her in a weak and somewhat emaciated condition, and the appetite being capricious, she was given a tonic. As the menses had failed to appear since admission, an effort was made to improve the general health, but no direct medication was resorted to. On the night of January 3, 1892, I was called by the night nurse, who stated that H. was suffering severe pain in the bowels. When I reached her room I found that she had voided a mass that presented the characteristic cystic formation, and precluded any doubt that my patient had given birth to a hydatidiform mole, notwithstanding her assertion that she had passed a portion of her liver. Before my arrival the bulk of the growth had been expelled in two pieces, and at that time she was bleeding, though not profusely. I immediately passed two fingers through the os uteri, which was dilated to the size of a silver dollar, and swept the cavity of the uterus as thoroughly as I was able, removing a quantity of cysts and shreds of decidua. The uterus contracted tightly, and the hemorrhage, which had never been excessive, stopped. She was given a vaginal douche of carbolic acid, 1:40; and two days later, as the temperature had reached 103° F., and the pulse 130 beats per minute, the uterus was washed out with a solution of corrosive sublimate, 1:5000, followed by carbolic acid, 1:50, a few cysts and decidual shreds being removed; an iodoform pessary was inserted, and quinine sulphate, gr. v every four hours, administered by the mouth. To relieve the intense pain and tenderness over the lower part of the abdomen, hypodermatic injections of morphine sulphate, gr. ¼, were given and hot turpentine stupes applied locally. Under this treatment the temperature rapidly subsided, and the patient made a good recovery. The entire growth constituted a mass slightly larger than a child's head; the cystic degeneration was not complete, and the amniotic cavity was empty. No trace of a fetus could be found; evidently the process had begun shortly after conception.

The points of interest in this case, to me at least, are:

1. The absence of all the classical signs of the presence of a mole. There was nothing like a hemorrhage from the time of her admission till the birth of the neoplasm. No cysts were passed. The character of the institution renders exceptional facilities for making sure of these facts. The abdominal enlargement, usually disproportionate to the period of gestation, was so slight as to escape notice in a patient under observation for amenorrhea; there was no enlargement of the breasts. Owing to the mental condition of the patient no information could be gained as to the time of conception, and as she made no complaint and manifested none of the usual signs of pregnancy, the condition was not diagnosticated.

2. The lack of apparent cause for the degenerative process. The patient is young, a primipara, in good health until within a few weeks of delivery; and with the exception of one case of pulmonary tuberculosis, as stated, the family history shows no hereditary dyscrasia.

EXAMINATION OF SOME COMMERCIAL VARIETIES OF HYDROGEN DIOXIDE.

BY HENRY LEFFMANN, M.D.,
AND
WILLIAM BEAM, M.D.,
OF PHILADELPHIA.

HYDROGEN dioxide, generally inaptly called hydrogen peroxide, has found, in recent years, many valuable applications in preventive medicine and therapeutics. The pure article being very difficult to prepare and preserve, the commercial forms consist of dilute solutions in water, containing a very small amount of actual dioxide. Since the medicinal value of the article depends on its strength and freedom from impurities, it is important to make some comparative determinations on these points of the brands of hydrogen dioxide now offered in the market. The tests employed have been frequently described, and it will not be necessary to repeat them here. Among the impurities, free acid is the most objectionable, on account of its irritating action.

Comparative tests of commercial brands have from time to time been published in medical and pharmaceutical journals, but usually without indication of the identity of the samples, and, therefore, of but little practical value. In judging of the strength of any sample, the unavoidable liability to decomposition must be regarded. On the other hand, the proportion of free acid and of metallic salts will not be appreciably affected by the lapse of time.

In the following examination care was taken to secure fresh samples, and they were all in the original, unbroken packages when delivered to us. The proportion of hydrogen dioxide is expressed, as is customary, in volumes of oxygen, determined by the standard method with potassium permanganate:

Brand.	Volumes of oxygen.	Barium salts.	Earthy salts other than barium.	Acidity expressed in milligrams of KHO required for 25 c.c. of sample.
O. C. (Oakland Chem. Co.)	15.6	None	None	3.8
Béné	11.8	"	"	3.36
Lehn & Fink	10.5	"	"	4 08
Marchand (1st sample) .	10.1	"	Present	34.08
" (2d sample)[1] .	Not determined	"	"	22 00
Powers & Weightman .	9.02	"	"	23.04
Merck	12.09	"	Large amount	16.32
Mallinckrodt . . .	9.14	"	Traces.	8.64

[1] This sample was one that had been purchased for some laboratory experiments in bleaching, and, having been kept without any precautions to preserve its strength, the determination of the volume of O would have been of no value in indicating the original quality; but since the amount of free acid and earthy salts will not be affected by such treatment, they were determined. The volume strength claimed for the sample originally was less than that claimed for sample No. 1.

ORIGINAL LECTURE.

ENDOMETRITIS: UTERINE DILATATION AND DRAINAGE.

A Clinical Lecture delivered at the Medico-Chirurgical Hospital, February 2, 1892.

BY E. E. MONTGOMERY, M.D.,
PROFESSOR OF OBSTETRICS AND GYNECOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE; OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL; AND GYNECOLOGIST TO ST. JOSEPH'S HOSPITAL.

I PROPOSE to-day to consider the subject of dilatation of the uterus and the conditions that indicate it. We will first discuss the indications for dilatation and the advantages to be derived therefrom. In many cases the knowledge that we are able to obtain by means of conjoined manipulation and examination with the speculum, and in rare cases the introduction of the sound, will be insufficient to determine exactly the character and condition of the cavity of the organ. In such cases it may be necessary to examine still further to determine what is its condition and the lesions that give rise to certain symptoms that may be present. Such an exploration of the uterus will be indicated particularly when hemorrhage is a marked symptom. It is well to remember that hemorrhage may be due to a variety of causes: thus, for instance, to a diseased condition of the endometrium, which is known as hemorrhagic endometritis, in which the mucous membrane is swollen, its vessels distended, the surface abraded, the epithelium lost, and the capillaries so engorged and their walls thinned that they rupture easily. Not unfrequently we have papillary growths on the uterine mucous membrane, a condition such as I have shown you at different times during my clinical lectures, cases similar to the one on which we operated a week ago. These growths may extend from the uterus into the vagina, forming what is known as small granular, mucous, or vascular polypi; or they may be situated at any part of the uterine mucous membrane, and in some cases give rise to considerable hemorrhage.

Again, hemorrhage may be the result of inflammation in the structures about the uterus; thus, inflammation of the broad ligament on one side, in which extensive exudation occurs, may give rise to a passive congestion of the uterus and a resultant hemorrhage independent of any disease of the uterine mucous membrane, or in which such disease is secondary to that outside of the organ; in cases in which the ovaries have undergone what is known as cystic degeneration, hemorrhage is also a marked symptom. In such cases, notwithstanding everything that may be done in the way of local applications to the uterus itself, the patient will continue to bleed until the congestion is arrested by the removal of the offending organs.

Another source of hemorrhage, and one that should ever be kept in mind, is the result of degeneration of a malignant character of the uterine mucous membrane.

This, in the majority of cases, results from disease about the cervix, and, when so situated, is readily recognized by touch or examination through the speculum. There are cases, however, in which malignant disease of the uterus occurs, and the body is the seat of its development; this takes place in about 2 per cent. of the cases in which malignant disease is situated in the uterus. Again, hemorrhage may result from sarcoma situated either in the walls of the organ or in its mucous membrane. Probably the most frequent cause of uterine hemorrhage is the development of growths within the walls of the organ itself, which in their subsequent development are forced into the cavity. These growths are known as fibromata, or fibro-myomata. As such a growth develops and is situated near to the internal lining membrane, it is pushed into the cavity, taking with it a covering of the mucous membrane. The vessels in this mucous membrane become distended, their walls thinned, the epithelium lost, the papillæ become enlarged, points of ulceration are found, and hemorrhage of a serious character, often sufficient to endanger the life of the patient, may take place. In such cases, the hemorrhage is either an exaggeration of the menstrual flow, known as menorrhagia, or one that occurs indedently of it and known as metrorrhagia. The enumeration of these various conditions illustrates the importance of further examination in order to be able to determine exactly the cause of hemorrhage in an individual case.

The degree of dilatation will depend, of course, upon the purpose for which it is accomplished; if it is with a view of removal of the growths within the cavity of the organ, a greater dilatation will be required than simply for the exploration of the cavity for diagnostic purposes.

Independently of the indications for dilatation of the uterus for diagnostic purposes, the uterus is also dilated with a view to therapeutic effect—as when the uterus is flexed, or its canal is contracted as a result of congenital conditions, or from the existence of inflammatory trouble. Inflammatory conditions may be the sequelæ of either septic infection following parturition, or of long-continued catarrhal disease of the uterine mucous membrane. Again, dilatation may be said to be indicated in those cases in which endometritis has existed for a considerable length of time, has given rise to swelling of the mucous membrane of the outlet or cervical canal to such a degree that the drainage of the uterus is defective, and there is a constant tendency to regurgitation into the tubes, thus developing tubal trouble. Indeed, in the treatment of inflammatory diseases of the uterus, the first and prime consideration should be to secure thorough and efficient drainage. We need but to investigate the history of long-continued inflammation of the uterus to recognize the close association of tubal and ovarian disease.

The patient I bring before you to-day is a woman who is suffering from a disease that has been in existence for some length of time, and in whom I consider that the indication for dilatation of the uterus from a therapeutic standpoint is amply indicated. The woman has been married twelve years; she has one child, eight years of age; the menses are irregular, sometimes occurring every six weeks, and attended with pain in the abdomen and back, with headache, and followed by slight leucorrhea. She also suffers from constipation. Patients that have an inflammation existing in the mucous membrane of the uterus have not only pain at menstruation, but the pain usually occurs during the entire period, and in some cases, particularly when the inflammation has extended beyond the uterus into the tubes, it is likely to be followed by pain of a spasmodic character. The condition is due to the muscular contraction of the Fallopian tubes, in their effort to force out and carry the secretion into the uterus. In this patient we have the uterus contracted; the mucous membrane of the neck is so swollen that the discharges cannot readily make their exit from the organ, and the patient has to go into labor in order to rid the uterus of them. The result is that these discharges will oftentimes make their exit more readily into the tubes than through the cervical canal, and the result is a dilatation of the uterine orifice of the tubes, oftentimes of the tubes themselves, increased intensity of the inflammatory condition, and largely increased secretion. When women have suffered for a considerable length of time from uterine disease, it is exceedingly common to find that there is a diseased condition of the tubes and of the ovaries. This disease is secondary; partly a result of the defective drainage from the uterus and regurgitation of the contents into these organs, and partly from reflex effect upon the circulation. Supposing such a patient, with the pelvic organs in a state of irritation, falls into the hands of a physician whose routine practice is by touch to ascertain the presence of the cervix, introduce the speculum, and through it the sound. The result will almost certainly be a carrying of the infection into a soil ready for its nurture and development, and the occurrence of an acute attack resulting in tubal and ovarian trouble so serious as possibly to threaten the life of the patient. So frequently has this been the case, that some physicians have been led to condemn all local treatment as injurious and detrimental; have been led to deride and condemn any treatment directed to the inflamed surfaces of the uterine tract. The difficulty is not that a plan of treatment has been pursued, but that an improper one has been exercised. It is just as important to religiously adopt aseptic measures in the treatment of the uterine mucous membrane as it would be in the practice of abdominal surgery. Those who have condemned plans of treatment directed to the uterus, have rendered a service in directing attention to the danger resulting therefrom, and awakening in the minds of the profession the importance of most careful and proper procedures in treating such difficulties.

Instead of the presence of the conditions described contra-indicating uterine treatment, however, they should be considered as urgently demanding the appropriate measures, in order to prevent more serious trouble. Even though there may be ovarian or tubal trouble, by proper and judicious measures we may be able to arrest its further progress, and save the patient from the necessity of a sacrificial operation. Within the last two years I have operated upon a number of patients upon whom sacrificial operations had been advised, and have been successful in restoring them to health without the loss of their organs.

You remember, this patient gave a history of having had a child eight years ago, and we find that there is in her case some indication of tubal disease, as presented

by tenderness, by some thickening of the tube, the result possibly of distention and of peri-salpingitis. I propose to operate upon her to-day with a view of overcoming this condition and possibty saving her from a sacrificial proccdure. As a preliminary to this, we have had the alimentary canal thoroughly evacuated, the vagina has been irrigated with antiseptic solutions twice daily, and once every hour for the last three hours—this with a view of disinfecting, as thoroughly as possible, the vaginal tract, and particularly the discharges that take place from the uterus. It is important to remember, however, that irrigation alone will not entirely remove the débris, so that the vagina should be thoroughly swabbed or brushed with a disinfectant solution such as acid sublimate, or the peroxide of hydrogen, before the speculum is introduced and the operation begun.

The instruments have been as carefully prepared as if for an abdominal operation; the care and precaution in this direction really constitute the secret of success in all operations of this character.

With the patient under the influence of an anesthetic, before proceeding to the operation, I examine carefully about the uterus to determine whether the inflammation is too extensive to permit us to proceed safely with the plan we have in view. Finding the uterus to be movable —that, notwithstanding the thickening and enlargement of the tubes, they are not bound down—we shall proceed as intended. My object in examining carefully in this matter is, that we may not run the risk of having our patient infected from accumulations that are already within the cavity of the uterus, as in tubes distended with pus or other infectious material. The operation is performed as follows: We introduce a Goodell speculum for the reason that it may be made to dilate laterally or antero-posteriorly, and its blades are less in the way. The cervix is grasped with the volsella forceps and drawn upon sufficiently to straighten its canal, and the dilatation is begun by the use of graduated bougies. These instruments are so arranged that there is a bougie upon either end; the circumference of each bougie about two centimeters greater than the one preceding. It is astonishing how rapidly and safely, with instruments of this character, the cervical canal can be dilated, from an opening through which a very small instrument can be passed to one sufficiently large to permit the introduction of the finger. I prefer the bougies to the ordinary parallel dilators, for the reason that the pressure is made upon all parts of the uterus equally, and there is less likelihood of tearing. Then, too, in the bilateral dilatation, the pressure is made entirely upon the sides of the uterus, which gives rise to severe bruising and subsequent danger of a slight slough that may lead to the infection of the cavity of the uterus. After the dilatation of the organ and introducing the blunt curette, we find that the cavity of the uterus is quite roomy and large, showing evidence of its dilatation by retained secretion. The curette is passed over the mucous membrane upon all sides, with a view of dragging off any granulations, pressing out of the glands their secretion, breaking small cysts that may be present, and in this way changing an unhealthy into a healthy inflammation. Recently in a case in which the hemorrhage was quite marked, and we supposed there was a possibility of malignant disease, the dilatation and the use of the curette following resulted in the dragging off of a polypus the size of a hazel-nut, and the relief of the patient from the condition that had given rise to her discomfort. We go over the mucous membrane here with the curette, but find nothing more than the evidence of some granulations and the increased bleeding. This patient has been twice advised that an abdominal operation would be necessary, with a view to the removal of the ovaries and tubes. While it is possible that the plan of treatment we are now instituting may not be entirely successful, and that such an operative procedure might yet be necessary, it is still important that the patient should have the opportunity to escape, if possible, from a sacrificial operation.

After the curetting, we wash out the cavity of the uterus with either acid sublimate, or, what I like better, the peroxide of hydrogen. This may be done either by the use of the double catheter or by taking a swab of cotton, dipping it in the solution, and in this way mopping out the cavity of the organ. If there is reason to suppose that considerable infectious material is within the cavity of the uterus, the irrigation will by all means be the most desirable method to pursue. As we were satisfied that in this patient the condition resulted from defective drainage, we will supplement the dilatation, curetting, and irrigation of the uterus by the introduction of the drain through which the discharges of the organ may be able to make their exit. For this purpose I use a drain recommended by Wylie, of New York; it consists, as you see, of a hard-rubber plug with a groove on its side. What I. like still better, is the one recommended by Boldt, in which there are three grooves. With this placed in the cavity of the uterus, we feel perfectly certain that there will be no reason for the locking up within the organ of the discharge. Having carefully wiped out the vagina, we introduce an iodoform-gauze tampon to hold the instrument in place. This gauze is rapidly saturated with the discharges, and does not consequently obstruct their exit from the uterus. It will be permitted to remain there for forty-eight hours, and after its removal the uterine cavity will be irrigated twice daily with a disinfectant solution.

Dilatation of the uterus is not by any means a new method of procedure. It has long been recognized as a necessary plan of treatment in many cases, though the methods of its accomplishment were formerly quite different. The usual method recommended is the introduction of either a sponge, laminaria, or tupelo tent, permitting this by the absorption of the discharges to increase in size and thus dilate the uterus.

Although the sponge may be saturated with carbolic acid, or precautions taken at the time it is introduced to render it antiseptic by the use of salicylic acid, it is still an objectionable method of procedure. The sponge rapidly absorbs the discharge from the uterus and very quickly decomposes, and at the same time the rough sponge irritates the mucous membrane and offers the most favorable soil for the development and absorption of septic material. When this method of dilatation was a frequent one, I have seen numbers of cases in which there had been an extensive inflammation in the uterus, extending to the tubes, and even resulting in the death of the patient. Consequently, I do not only not recommend the use of the sponge tent as a means of

dilatation, but would earnestly condemn it as being far too dangerous for ordinary practice. The laminaria and tupelo tents are less objectionable than the sponge, but they are slower methods of dilatation of the uterus, and consequently, from inability to keep the parts continuously disinfected, are also attended with danger. The use of the sponge tent in increasing the amount of serous discharge from the surface of the uterus, was found very beneficial in reducing the size of the organ. In this way the therapeutic influence of the tent was certainly worthy of consideration, but this result of the treatment can be accomplished by other and less dangerous means.

Dr. Vulliet, before the International Medical Congress in Washington, in 1887, read a paper on a plan of treatment which consisted in tamponing the uterus with antiseptic gauze, preferably iodoform, and repeating this until the uterus was thoroughly dilated; by this plan of procedure he was able not only to dilate the uterus, but also to dilate it so efficiently that the cavity of the entire organ could be inspected. The method consists in packing in the cervical canal iodoform-gauze, which, by capillary action, serves as a vent for the discharges within the uterus. It leads to dilatation of the cervix, to retraction of the uterus, and in this way the organ is rapidly dilated. It is a plan that is slow in action, but the drainage of the uterus with it is perfect, and the increased serous secretions and activity in the uterine walls lead to rapid completion of the process of involution in subinvoluted uteri. If the dilatation is not sufficiently complete by the first introduction of gauze, the cavity of the organ can again be rendered aseptic and a new application of gauze made, in this way enabling the most thorough examination to be made of the cavity of the organ, and in some cases having of itself a marked beneficial effect on the size and condition of the uterus.

A number of years ago a plan of treatment was introduced by Simpson, and extensively followed in this country by Sims, that consisted in bilateral incision of the cervix. In this way the opening was enlarged; patients who had formerly suffered from dysmenorrhea were in the majority of cases relieved, and it not unfrequently had a beneficial effect upon sterility. Sims's plan was to plug up the cavity of the uterus with cotton, sometimes saturated with a styptic with a view of arresting hemorrhage and preventing the reunion of the divided surfaces. This plan of treatment, however, interfered with drainage and in some cases was attended with and followed by the development of septic trouble. The observation of this work led Dr. Wylie to introduce the drainage-tube, an instrument that serves not only to drain the organ, but by its presence stimulates muscular contraction of the uterus with a view to secure its expulsion, and the activity of the circulation thus engendered brings about a reduction of its size.

By the plan of treatment that we have thus pursued in this patient, more is accomplished in the treatment of endometritis than was formerly obtained by months of local treatment. I would recommend this plan in every case of inflammation of the uterine mucous membrane, as by the rest in bed, the increased secretion, and change of surroundings the condition of the patient is rapidly improved. This plan of dilatation and curetting of the uterus is one that is particularly applicable to those cases of septic inflammation following parturition. I have several times been called upon to treat a patient suffering from such trouble and have urged the importance of prompt dilatation and curetting of the organ, thus removing débris that affords a source for putrefactive changes and absorption of the ptomaïnes or products.

In every such case, treatment should be prompt, with a view to limit the extension of the disease to the uterus. If it has extended into the tubes, there is danger of the development of purulent salpingitis, and the formation of large pus-collections. Such cases are ordinarily treated by vaginal, or even intra-uterine irrigation, and with a large accumulation of débris, the germs multiply beneath this, are not reached or affected by the irrigation, or only to a limited degree, and the products are absorbed, giving rise to marked elevation of temperature.

In curetting, the finger is by far the safest and most judicious instrument, as by it the thickness of the uterine walls, their consistency, and the amount of force required to bring about the separation, and the parts affected are more rapidly determined. The curetting should be followed by irrigation with an antiseptic solution. A very good plan is to use, first, the acid sublimate solution, 1 to 2000, then sterilized water, and finally peroxide of hydrogen, following this again by sterilized water. As the surfaces of the uterus are large and flabby, likely to fall against each other and interfere with the subsequent drainage of the accumulations from the organ, the preferable plan of procedure is to introduce a gauze tampon, consisting of a twist of iodoform gauze, to the fundus of the uterus, letting this be sufficiently large to fill up the canal. By its presence this acts as a drain, keeps the surfaces separated, promotes capillary action and secretion, and, as a foreign body, causes contraction of the uterus. The process of reduction in the size of the organ is very rapidly accomplished by this means, and if the temperature has before been high, it will be found to fall nearly, or quite, to normal.

CLINICAL MEMORANDA.

FRACTURED CLAVICLE: A NEW DRESSING.

By EDWARD S. STEVENS, M.D.,
of Cincinnati.

That very common seat of fracture, the clavicle, has furnished the text for many a paper, and the dressings for fractured clavicle are almost without number, yet there is still something to be learned in the way of the proper treatment of this form of injury.

In considering the deformity that is usually present in fractured clavicle, surgeons have generally limited their observations to the immediate seat of the fracture and the muscles acting directly upon the fragments. The more rational method would appear to be that looking to the displacement of the shoulder for the cause of the lapping of the fragments. The weight of the shoulder, and the action of the pectoral muscles and the latissimus dorsi have been given as the forces contributing to drag the shoulder downward, forward, and inward. Another factor in the production of this displacement, which I do not remember to have seen mentioned elsewhere, is the action of the serratus mag-

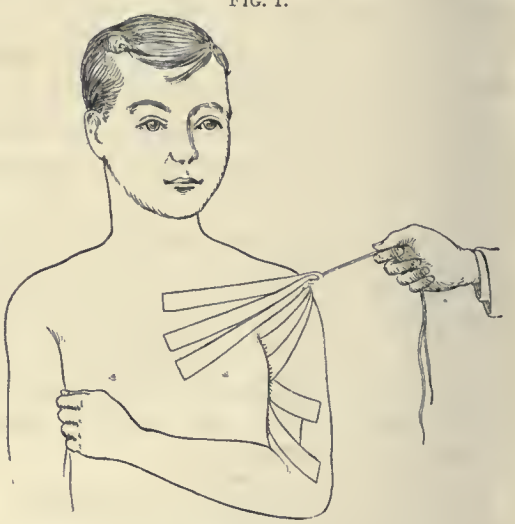
nus. This muscle, acting from the sides of the chest-wall upon the vertebral border of the scapula, will by itself produce the displacement of the shoulder which is to be counteracted in treatment. This view of the injury presents the clavicle as a brace to the shoulder.

The usual plans of treatment have employed a sling for the elbow, a wedge for the axilla, and a retaining bandage, and there have been many modifications of this plan. The method I have to offer is the employment of direct extension and counter-extension.

The late Dr. I. L. Drake, of Lebanon, Ohio, had, for many years, made fractured clavicle a special object of study. The dressing I describe is the result of his earnest work, though I believe he never made use, in a case of fracture, of the dressing to which he had given so much study. The case I report is the only one in which it has been tried.

The extension apparatus consists of six strips of adhesive plaster, each about one yard long and two inches wide, and a cord. The strips of plaster are applied in

FIG. 1.



The extension apparatus.

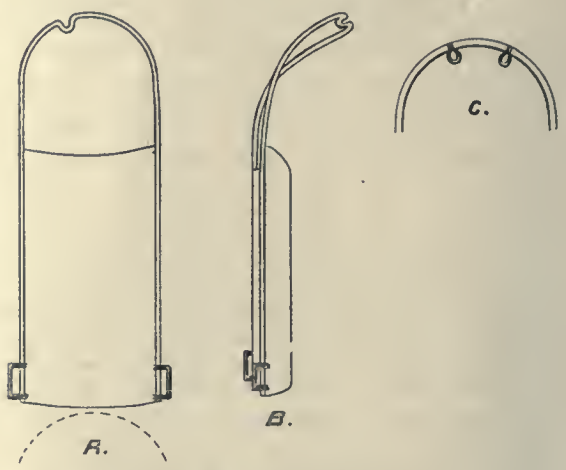
the following manner: The first is applied directly under the clavicle along its whole length. At the acromio-clavicular articulation the plaster is cut sufficiently from each edge to permit a fold of the adhesive side to be turned upon itself until covered. The strip is then continued spirally around the arm to the elbow. The second and third strips are applied similarly but lower down over the pectoralis major.

The other three are arranged over the back in a similar manner and are wound around the arm in front. The cord is then tied to the strips of plaster where they are folded over the acromio-clavicular articulation.

The apparatus for counter-extension consists of a metallic plate, five or six inches wide and about eight inches long, concave from side to side, so that it will fit the side of the chest; from one end of it a stiff wire is bowed from one side to the other and bent out so that when the plate is fitted to the side the wire, which has been slipped over the arm, will be above and beyond the shoulder. An indentation is made in the wire bow a little back of its central point.

This gives us a fixed point above, behind, and without the line of the clavicle and supports the broken brace to the shoulder. The indentation prevents the cord, which is tied to it, from slipping. To the lower

FIG. 2.



Apparatus for counter-extension.

A. B. Plate as seen from the front and side. *C.* Author's modification of the bow.

extremity of the plate there is soldered on each side a wire loop.

The extension-apparatus being applied, the apparatus for counter-extension is arranged and applied as follows: A wide strip of plaster is fastened to the concave side of the plate, the strip being long enough to pass

FIG. 3.

Dressing as applied.

under the elbow and up the outer side of the arm. The plate may then have a light pad of some soft stuff applied to each side. The wire is slipped over the arm to the shoulder; a band is passed over the uninjured shoulder, through the wire loops at the lower end of the plate, and securely fastened; and the plate is bound to the chest by a roller bandage.

Being assured that the fracture is reduced, the cord is firmly tied to the indentation in the wire bow, the arm is placed at the side, and the strip of plaster carried from the plate to the arm. The forearm being permitted to rest in a sling, the dressing is completed.

The foregoing corresponds very closely with the dressing as originally designed by Dr. Drake. In my use of it I did not employ the strip of plaster extending under the elbow between the plate and the arm. Indeed, I believe that if it was thought necessary to keep the arm immovable a roller bandage would answer a better purpose than the strip of plaster. In another case, if I found it best to have a new plate made, I should modify it in this way: Let the bow be made plain, without indentation. At about three-quarters of an inch, or an inch, on each side of the middle let a small ring be fastened to the under side of the bow (Fig. 2, *C*). This will permit of the apparatus being used on either side of the body. As originally designed, it can be used on one side only.

I believe that this dressing could be used with advantage in certain cases of dislocation of the sternal extremity of the clavicle, in which, if one can accomplish reduction, it is ordinarily difficult to maintain it.

The following case demonstrated the practicability of this form of dressing.

Sunday morning, July 26, 1891, Mr. H., aged about sixty-three, in crossing a lot, fell, bruising his arm and the right side. Believing the injury to be simply a bruise, the family made local applications and did not call me in until the next day. I found the right side of the chest and right arm very much discolored, and there was so much swelling over the clavicle and upper ribs that it was difficult at first to tell whether there was a fracture or not. There was the characteristic posture, however, and pressure over the inner portion of the middle third of the clavicle, where there was the most swelling, elicited crepitus. I applied the dressing described, leaving the arm free and the forearm in a sling. Immediately he expressed himself as being more comfortable. Owing to the great swelling, I could not be sure that the fracture was perfectly reduced, and for this reason the case is not entirely satisfactory to me. In the course of a week or ten days the swelling had almost disappeared and showed as little deformity as is usually seen with the old dressings. Indeed, the patient and his wife could see no difference between the two sides, although there was a distinct, though slight, angle at the situation where crepitus has been found. During the nearly three weeks in which he wore this dressing, the only attention needed was on two or three occasions to readjust the bandage that bound the plate to his side, and to tighten the cord at the indentation in the wire bow. Each time the cord was tightened he spoke of feeling more comfortable. The patient removed the dressing himself on the eighteenth day, although I had intended leaving it on for a week longer.

THREE SHOULDER-JOINT AMPUTATIONS.

By GEORGE S. BROWN, M D.,
of Birmingham, Ala.

Case I.—Henry W., colored, fourteen years of age, was a driver of a coal-hopper at the Sloss Coke Ovens. The hopper is a large iron vessel on a small flat car of four wheels, weighing 1500 or 2000 pounds. On January 12, 1890, the boy went to sleep on the track in front of the hopper and the mule pulled it over him, producing the following injuries: The arm was crushed through the surgical neck of the humerus; the acromion process of the scapula was broken off and hanging in the wound; there was fracture of the second and third ribs; an abrasion, half an inch in width, apparently made by the wheel-flange, almost encircled the neck. There was double internal strabismus, which his friends said he did not have before, and hemorrhage from both ears, with profound unconsciousness. No meningeal fluid was seen in the discharge from the ears. The crushed bone and tissues were trimmed from the wound, the axillary artery tied, and the wound dressed. There was no flap to cover it. There was not enough tissue of any kind to cover the glenoid cavity, which occupied the center of the wound. On the third day the boy recovered consciousness, and though from then on he was perfectly rational, he was constantly cross and irritable, and complained of head-pains for about three weeks. On the seventh day an abscess was evacuated two inches anterior to the stump over the site of the fractured ribs. After this the temperature, which had ranged from 101° to 103°, went to normal, and did not rise again. The abscess-cavity was washed out with hydrogen peroxide, and a few minutes afterward, in a fit of coughing, he expectorated what seemed to be the effervescing peroxide; but the washing was repeated daily and he did not again show any evidence of lung-complications. The amputation-wound healed rapidly by granulation, and, what was noticed with interest, independent granulations began exactly in the center of the glenoid cavity, and, when first noticed, were only the size of a pin's head. This point spread to meet the granulations from the borders of the wound and rolled over the edge of the cavity until it was filled to a level. This point of granulation was evidently an accidental epithelial graft which hung there from the washing. I again saw my patient in January, 1892, two years after the accident. The double squint persists unchanged; otherwise he is in good health.

Case II.—J. W. B., white, twenty-one years of age, brakesman, was run over by a freight car January 23, 1890, and the right arm was crushed off two inches from the joint. The axillary artery was tied, the mangled tissues trimmed out, and the drainage-tube used was removed on the second day. The stump completely healed without suppuration in twelve days.

Case III.—H. W., white, twenty-eight years of age, a telegraph operator, was run over by a freight train at 2 A.M., January 16, 1891. The right arm was crushed off three inches from the shoulder-joint. Disarticulation was performed, the artery tied, the flaps approximated, a drainage-tube inserted, and the wound sutured with large-sized catgut. On the sixth day a little rise of temperature had been observed for a day or two; so the dressings were removed; the drainage-tube having been removed on the second day. The line of union was perfect, except at each extremity where the drainage-tube had been; this was suppurating, and every stitch-hole was a suppurating sinus. Water injected into either angle of the wound spurted through the stitch-holes, but did not appear anywhere in the line of incision. The stitch-

holes that were not deep enough to communicate with the track of the drainage-tube were suppurating independently. A few days later a deep abscess over the ligated artery was opened, and two days after this the catgut knot, which had held the axillary artery, came away in the washing. The line of incision of the stump was perfectly healed and the whole trouble was clearly traced to the commercial carbolized catgut, the soaking in alcohol that it had undergone during the time of the operation not having improved it. The healing was complete in three weeks and the result perfect.

In all three of these cases, as the first step in operation, the bruised and twisted axillary arteries were found in the wound, traced up and tied above the clot, which in each case was a full inch from the torn extremity.

MEDICAL PROGRESS.

Two Cases of Thomsen's Disease.—DELPRAT (*Deutsche medicin. Wochenschr.*, 1892, No. 8, p. 158) has recorded two interesting cases of Thomsen's disease, or myotonia congenita, in two brothers in a family in many members of which abnormal muscular contraction seemed to be a common feature. One of the patients was nineteen and the other fourteen years old. In both, attempts at muscular movement were attended with stiffness and spasm, which gradually grew less and disappeared as the movement was accomplished and repeated. Muscular development was excessive. There was some shortening of the flexor muscles of the hands, so that perfect extension was impossible. Muscular mechanical irritability was but little increased; irritation, however, was followed by contraction that persisted for some time. The small muscles of the hand contracted *in toto;* the long muscles presented elevations and depressions at the site of percussion, which gradually disappeared. The knee-jerks were preserved; ankle-clonus was wanting. There was no ataxia. Fibrillary contractions were not observed. The action of the sphincters was not deranged. Sensation was preserved. The reactions of muscle and nerve to faradism and voltaism were at first tardy, but on repeated stimulation or after voluntary movement the responses were ready and active. Tetanic contraction was readily induced. In the first case rhythmical wavy contractions, passing from the kathode to the anode, followed voltaic stimulation of some of the muscles.

Death in an Infant from Laryngeal Obstruction by Vomited Milk-curd.—DEMME (*Bericht des Jenner'schen Kindersp.*, Berne, 1891) has reported the sudden death of a dyspeptic child, ten months old, without recognizable cause, in which at the autopsy the esophagus and entrance to the larynx were found occluded by a coagulum of cows' milk ejected from the stomach by vomiting and causing asphyxia.—*Centralbl. für die gesammte Therap.*, x, 3, p. 171.

Orchitis following Influenza.—BRISCOE (*Lancet*, No. 3569, p. 192) reports the case of a laborer, thirty-two years old, in which, after an attack thought to have been influenza, orchitis developed, without other complication.

THERAPEUTIC NOTES.

Puncture for the Relief of Anasarca.—GERHARDT (*Deutsche medicin. Wochenschr.*, No. 7, 1892, p. 138) proposes to obviate the wound-infection that so often follows the various modes of puncture for the relief of obstinate and intense anasarca by the observance of rigid surgical asepsis and antisepsis. The extremities are cleansed with soap and water and douched with sublimate solution. With a knife, sterilized in carbolic acid solution or in a hot 2 per cent. soda solution, from four to eight punctures are made through the skin. The limb is then wrapped in antiseptic gauze and cotton, and the dressing is carefully renewed as soon as it becomes saturated.

Inunctions of Iodoform in Pulmonary Tuberculosis.—The following are two forms in which FLICK employs iodoform by inunction in the treatment of pulmonary tuberculosis:

℞.—Iodoformi	. . . .	ʒj.
Ol. rosæ	. . . .	gt. j.
Ol. anisæ	. . . .	fʒj.
Ol. morrhuæ	. . . .	fʒij.—M.
℞.—Iodoformi	. . . .	ʒj.
Ol. rosæ	. . . .	gt. j.
Ol. anisæ	. . . .	fʒj.
Ol. olivæ	. . . .	fʒiij.—M.

Asafetida for Habitual Abortion.—In support of the utility of asafetida in the prevention of habitually repeated abortion not dependent upon a recognizable cause, such as syphilis, tuberculosis, disease of the uterus or its appendages, TURAZZI (*Centralbl. für Gynäkol.*, 1892, No. 9, p. 164) has collected forty-one cases from various sources, in thirty-seven of which the use of the remedy was followed by normal labor. Three grains of the gum-resin are given daily from the beginning of pregnancy, the quantity being gradually increased to fifteen grains, with a subsequent gradual diminution in the dose.

Sodium Ethylate in Dermatologic Practice.—Sodium ethylate may be obtained by boiling sodium with alcohol at 122°. Inunctions of the agent (2 parts to 100 of olive oil) have been found useful in psoriasis. Applications of a 10 per cent. aqueous solution in cases of lupus, following curetting, have been followed by permanent improvement.—*La Méd. Mod.*, 1892, No. 9.

For Pruritus Ani.—An ointment containing—

Creasote or carbolic acid .	1 dram.
Lard	2 ounces.
Camphor	1 dram.

Applied topically, is a safe and often effectual remedy for the relief of pruritus ani. WHITLA.

Deodorized Chloroform.—The ethereal oil of coriander-seed is recommended as a deodorant for iodoform. Two drops of oil are thoroughly mixed with each fifteen grains of iodoform.—*Deutsche med. Wochenschr.*, 1892, No. 7.

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SATURDAY, APRIL 9, 1892.

AKROMEGALIA AND ALLIED CONDITIONS.

In bringing together the essays of Marie and Souza-Leite upon akromegalia, together with the bibliography of the subject, and an appendix of cases by other authors, the New Sydenham Society has conferred an important benefit upon English medical literature.

It must be conceded by all that physiologists are far from understanding the complex and varied relations existing between the nervous system and nutrition; while the influence that disease of one organ may exert upon the nutrition of distant and apparently unrelated organs, from failure of proper metabolism, with deprivation of necessary anabolins, or from perversion of metabolism giving rise to the production of poisonous katabolins, is almost an unsurveyed field.

By the careful study of unusual cases, by recording the facts, even without attempts at explanation, all clinicians have it in their power to advance our knowledge of this subject. All cannot be Newtons, to discover by a sudden flash of genius, illuminating previous careful and long-continued study, the great generalization that shall explain the multitude of data; but all can help to accumulate the jots and tittles that a future Newton may combine into a word of light.

Marie is entitled to lasting gratitude for the keen observation and patient industry by which he has erected into a separate group of diseases the trophic lesions of the extremities. There can be little doubt that these cases have been seen from time to time by others, less keen-sighted than Marie and the observers whose cases he has quoted, and have been diagnosticated, perhaps, as chronic rheumatism, or rheumatoid arthritis; or, perhaps, not diagnosticated at all.

It is a common mistake of inexperienced men to see a new disease in every case that differs from the type of a special disease as laid down in the books; but it is no less a mistake on the part of experienced men to force into the Procrustean bed of established nosologic classes every case that comes under their observation.

Charcot, Paget, Marie, Morvan, and others, who have studied the trophic lesions of the extremities, have given us a number of new classes, and doubtless we shall make the same error of forcing too many cases into these classes, as we had done with the cases properly belonging to them, before the industry of the observers cited had given us the new names.

As now established, it seems justifiable to apply the name of *akromegalia*, or enlargement of the extremities, to cases presenting thickening and elongation of the bony structures, especially of those of the hands, feet, and face, associated with overgrowth of the related soft parts, with kyphosis, with a number of more or less constant disturbances of sensation, general and special, with polyuria (sometimes albuminuria or glycosuria), and almost constantly with alteration of the thyroid gland. There is a peculiar shape of the face, which serves to discriminate this disease from the disease described by Sir James Paget under the name of osteitis deformans, and from that described by Virchow under the name of leontiasis ossea, as well as from myxedema, to which it bears some superficial resemblance.

In myxedema the face is round—"moon-shaped"; in akromegalia the facial outline is an elongated, irregular oval. In osteitis deformans, the increase in the size of the head is produced by overgrowth of the bones of the cranium rather than of those of the face, giving an outline somewhat resembling that of a triangle, with the base above, in contradistinction from the lengthened ellipse, almost equal in transverse diameters above and below, of

akromegalia. In PAGET'S disease, moreover, it is the long bones that are chiefly affected, the hypertrophy rarely attacking the hands or feet, or, if so, only to a slight extent. There is likewise a tendency to deformity of the bones, manifested by an outward and forward curving of the tibias and femurs, more rarely of the humeri and the bones of the forearm. This is not seen in akromegalia.

In a certain number of SIR JAMES PAGET'S cases the patients became shorter from this curving of the bones of the leg. In akromegalia, on the contrary, there is more often an increase in the height.

The condition to which the name of "pulmonary hypertrophic osteo-arthropathy" has been given is likewise to be differentiated from akromegalia. It is a condition of deformity and distortion of the fingers, toes, and spinal column, in association with pulmonary or pleural disease. The principal deformity of the digits is a thickening and elongation of the terminal phalanx, with that peculiar parrot-beak-like curvature of the nail to which the term "Hippocratic finger" has long been applied. The nails are longitudinally striated, and exhibit a tendency to split longitudinally. Practically, the condition seems to be an exaggeration of the clubbing of the fingers and disturbance of the nutrition of the nail, long recognized as a frequent accompaniment of empyema and of pulmonary tuberculosis. In akromegalia the deformity affects all of the phalanges, the hand becoming spade-like, and the soft tissues with the bones enlarging laterally, rather than longitudinally. The nail is short and broad, and does not reach to the end of the finger. The kyphosis in akromegalia is rather cervico-dorsal; in pulmonary osteo-arthropathy it is rather dorso-lumbar.

In pulmonary osteo-arthropathy, while there is sometimes a slight projection of the lower jaw, the upper lip is not thickened, the prognathism is less marked than in akromegalia, and the countenance, as a whole, appears to be smaller rather than larger than usual; the nose is sharpened rather than enlarged and flattened, and the facial outline more nearly resembles that of PAGET'S disease than that of akromegalia. In pulmonary osteo-arthropathy, moreover, there is a slight degree of epiphyseal enlargement of the bones of the forearm, and often enlargement of the bones of the leg, both of which conditions are unusual in akromegalia.

The condition called akromikria (STEMBO: *St. Petersburger med. Wochenschrift*, xvi, Nos. 45 and 46, 1891) presents many points of contrast with those just described. There is a diminution in the size of the extremities, of the nose and of the chin. The case described by STEMBO presented features somewhat resembling the condition termed by the French sclerodactylia. The morbid processes began in the terminal phalanges of the fingers, near the root of the nail, and were, in brief, cyanotic discoloration, bullæ, and ulceration, resulting in cicatrization, with loss of finger-substance and of the nails. Microscopic examination of the remains of the nails disclosed the presence of the achorion Schönleinii. The condition differs from MORVAN'S disease in everything but the paronychia and its results.

Similar, but not identical, conditions have been observed in cases of tuberculosis. In this connection reference may be made to recent observations upon the connection of rheumatoid arthritis with suppurative foci in the body, to the series of cases of distortion and atrophy of the fingers reported as of "affinity to RAYNAUD'S disease," by WARDROP GRIFFITH (*Medical Chronicle*, November, 1891), to the arthropathies of spinal disease, and to the muscular atrophy associated with joint-disease. The conditions must have a more or less intimate relation, and that relation is to be found either in the trophic nervous system, in the metabolic cycle, or in both.

To go a step further, cretinism, myxedema, exophthalmic goiter, and rheumatism are not entirely unrelated with one another and with akromegalia and the conditions resembling it. The whole subject offers an attractive field for clinical and pathologic research, and especially for research in that line which is destined to be productive of the most brilliant results in the pathology of the future, namely, pathologic chemistry. B. W. RICHARDSON has long taught that in "perverted zymosis" will be found the explanation of the "synthesis of disease." He has pointed the way, but it has not yet been more than opened to the explorer. Bacteriology has absorbed too much of the energies of medical observers, but perhaps the stimulus that it has given to the institution and organization of laboratories, and the fact that it has now reached a point where chemistry must be invoked to explain the pathogenetic action of bacteria, and the continuing results thereof, will prove of great advantage in furthering the important line of research that still awaits its KOCH.

HYDROGEN PEROXIDE AND THE "CHICAGO TRIBUNE."

Physicians have learned to expect from the secular press, wise and weighty comments on medical matters; but rarely do they find in the columns of a newspaper, comments *so* wise or *so* weighty as those quoted from the *Chicago Tribune* by the *Evening Telegraph* of Philadelphia, on that day long sacred to such wisdom, the First of April.

We allude to the affair as an illustration of the existing widespread and deep-seated cantankerous grudge against scientific medicine on the part of a large portion of the public, the combination of ignorance, impudence, and suspicion always popping up in the newspapers, and even in the best magazines and reviews, itself one of the products of the power of modern quackery in literary and social life.

The learned editor of the great Chicagoan daily does not pretend to have made a new discovery when he states that "the doctors are still groping blindly." The quacks whose advertisements so largely support many newspapers, proclaimed this long ago, in much more picturesque phaseology. It is gratifying to learn that "a few of their (the doctors') number are becoming alive to the truth of the matter;" and although this gratification is for the moment dampened by the information that "the schools still fight shy of it, and their older graduates are averse to investigation in a direction where loss of caste looms up in the distance as a reward for any who may commit themselves to a novelty in theory or practice," joy returns with the confident prediction that "the professional *vis inertia*, cannot, however, avail much longer. Opposition must give way before the pressure of public opinion in favor of rational treatment."

Now comes, however, the announcement of a great discovery of which the sole honor does belong to the learned editor of the Chicagoan newspaper; for surely no pathologist, no botanist, no bacteriologist known to fame has yet taught what this supreme scientific authority of the boundless prairies asserts "there is now no room to doubt"—namely, that the "bacterial causes of disease are mostly composed of albumin eliminated from the tissues of the larger organisms on which they feed."

In the light of this discovery, of course, "The next step is an easy one. If some material can be found that will coagulate these albuminous forms, thus killing them off without destruction of the tissues that have supported them, the problem will have been solved for more than half the diseases that flesh is heir to." Just so!

An ordinary editor would have been content with one such epoch-making discovery; even an extraordinary editor might have considered one revelation so stupendous as this, material sufficient for one editorial; but the genius who presides over the destinies of the great educational sheet of the Windy City, is not an ordinary editor, or even an ordinary extraordinary editor. In the very next sentence he piles Pelion on Ossa, and tells us:

"Such a remedy has been found in the so-called peroxide of hydrogen, or oxygenated water. It can be, and is, produced about as cheaply as soda water, and is a veritable microbe killer, both internally and externally. In the latter respect it is already being used in some of the hospitals and by a few medical men in their private practice. They find it invaluable as a cleanser of wounds, ulcerations, etc., not only destroying the bacterial forms that produce inflammation, but seeming to exert a really renovating action on the tissues, and especially in gradually, though rapidly, stopping the formation of pus. This success may be interpreted as indicating at least a possibility that the oxygenated water can be used with splendid effect in cases of kidney trouble, liver complaint, dyspepsia, diarrhea, rheumatism, etc."

Not to be too ungrateful to the source of his information, the editor graciously remarks that:

"Of course, the best mode of using the remedy in these and other diseases must be indicated by the more intelligent and progressive members of the medical profession. If too strong, it would act injuriously on the tissues of the human frame as well as on the bacteria that infest it; but if it can be thus controlled there is no good reason why the remedy should not be hailed as the long-sought specific which will rid the human race of its deadly burrowing pests, and give man a chance to live out the natural term—which is indicated, by comparisons of growth with longevity for other animals, to be not far from one hundred and twenty years."

A political organ may be successfully conducted by one who believes in spontaneous generation, and is unfamiliar with the researches of Tyndall, Pasteur, Cohn, Koch, Vaughn, Prudden, and their co-laborers—none of whom has yet "lost caste" by his contributions to science. Excellent leaders on the tariff may be written by one who thinks that

hydrogen peroxide was invented by some Chicagoan quack the day before yesterday, and is unaware that this most useful agent was introduced into medical practice in 1858, its beneficial powers fully recognized and its practical limitations accurately pointed out, by BENJAMIN WARD RICHARDSON, "the HUMBOLDT of Medicine," than whom none is more highly or more deservedly honored by "the schools" and by educated physicians the world over. The British lion's tail may be vigorously twisted, and salt sprinkled most gracefully on that of the German eagle, by one whose knowledge of chemistry recognizes no difference between H_2O_2 and "oxygenated water"; whose attainments in physiology warrant the opinion that so unstable a compound undergoes no change in the stomach or the blood; and whose extensive acquirements in pathology enable him to identify the conditions present on a suppurating mucous surface with the profound structural alterations of varied visceral lesions. But when one thus learned in biology and experienced in therapeutics writes a supposably serious article on the causes, prevention, and treatment of disease, it is extremely likely that the product of his lucubrations will be just so wise and just so weighty as the editorial of the *Chicago Tribune*, appropriately quoted by the *Evening Telegraph* on April 1st.

MEDICAL NIHILISM IN OHIO.

A MEDICAL practice bill, described as "a moderate one," that had been formulated under the combined advice of the physicians, the homeopaths, and the eclectics, of Ohio, was lately defeated by the Ohio Legislature—the whole matter being treated as a "screaming farce" by these worthy examples of American nineteenth century politics. In Europe, and, as we have seen, even in Chicago, it has been shown that a half-dozen half-insane cranks can endanger the whole structure of civilized society and bring social life to the point of barbarism. In Ohio, then, we have an example of the same fact in a medical way. Following the Cincinnati *Lancet-Clinic*, let us name these Nihilist crank-legislators of Ohio: PRICE, of Hocking County; DOTY, of Cleveland; JAMES, of Wood County; ELY, of Fulton County; BAIRD, of Ashland. Of course, the newspapers were generally on the side of the "physio-medicals," the patent-medicine men, the drug-stores, and a horde of nondescript quacks, who combined to laugh down the bill through *their* representatives here named. Let us specialize as guilty of this infamy, besides the hounds' chorus of the county newspapers, the Cincinnati *Commercial Gazette*, the Columbus *State Journal*, and the Toledo *Blade*. These should be well remembered. On the other hand, the Cincinnati *Enquirer*, the Cleveland *Leader*, and the Cincinnati *Times-Star* are mentioned as in favor of the bill.

What a revelation of the depths of ignominy and ignorance this fact discloses! The only consolation that can be gotten out of it is that lower depth can hardly be reached, and we may hope that the inevitable progress upward may at last be begun.

And this consolation also: the folly of compromise and the shame of it! After the disgrace of combining with the homeopathic and eclectic quacks in the desperate game, and then to be beaten! The only compromise with certainty of immediate success is that single one still left—to clasp hands with *all* the patent-medicine syndicates and the humbugs and deviltries that sail under our benign-malign laws, and as a body of physicians without a spark of honor, suicide in the open legislative market. Better to have been defeated with honor than thus besmirched with the shame of an ignoble and useless compromise.

CORRESPONDENCE.

THE VALUE OF TUBERCULIN IN THE DIAGNOSIS OF TUBERCULOSIS IN CATTLE.

To the Editor of THE MEDICAL NEWS,

SIR: The last number of THE MEDICAL NEWS contained a notice of the slaughter of a large number of Jersey cows suffering from tuberculosis, belonging to Mr. J. E. Gillingham, of Villa Nova. It was stated that tuberculin had been of assistance in making the diagnosis.

In order to appreciate the value of an agent used for this purpose, it is necessary to have an idea of the difficulties that stand in the way of making the diagnosis of tuberculosis in cattle in the ordinary way; that is, by means of the physical examination. The veterinarian has numerous difficulties to contend with in making physical examinations of his patients that do not trouble the ordinary medical practitioner. Still, except in the case of cattle, these difficulties are not insurmountable. In the cow, bred for milking, and the ox, for beef, the digestive function is all-important, and nature and breeding have developed the digestive organs at the expense of the thoracic cavity. The voluminous rumen is sometimes so distended with solid food that it presses forward against the liver and diaphragm, forcing them into the thoracic cavity, and giving rise to a dull percussion sound over the area where we expect to hear the clear sound yielded by percussion over a thick layer of healthy lung tissue.

This encroachment on the thoracic space is so irregular and sometimes so great that percussion of the posterior portions of the cow's lungs gives results of but little value. Auscultation also is interfered with by the very soft and indistinct breathing, and by the sounds arising in the thick layers of connective tissue separating the lobules of the lungs.

Again, tuberculosis in cattle is by no means confined to the lungs, and frequently exists in other parts of the body, as the bronchial glands, liver, intestinal walls, and mesenteric glands, leaving the lungs perfectly healthy.

In these cases, and they are not at all rare, it is next to impossible, except in the most advanced stages, to diagnosticate the disease by the physical signs. These circumstances have rendered laws dealing with tuberculosis and with other bovine scourges inoperative, or their passage inadvisable. It has been impossible for the veterinarian to detect the disease in its early stages, before it became dangerous to other cattle and to the consumers of the milk and beef.

I met this same difficulty when called upon to inspect Mr. Gillingham's herd of seventy-nine cattle. It was possible, relying upon the physical symptoms, to detect five cases of tuberculosis among all of the animals. It stood to reason that more were affected, for all had been exposed, and it is well known that the disease is contagious among cattle. But which of the animals were diseased? All, even those in which the disease had been detected, seemed, to the superficial observer, to be in good health. They were in good flesh; their appetites were regular and good; they were giving milk normal in color, taste, and quantity.

In this extremity it was decided to use tuberculin. This substance had already been used many times in European countries, and the reports concerning its use as a diagnostic agent were almost uniformly favorable.

The tuberculin used had been sent to Philadelphia about a year before, and it was perfectly clear.

The cows were given injections of doses ranging from 0.2 to 0.4 c.c., diluted with nine parts of a 1 per cent. solution of carbolic acid. The seat of injection was the right scapular region, and the skin was always carefully disinfected with creolin before the operation. The temperatures were taken at the time of injection, again after five hours had passed, again three hours later, and again for the last time after another period of three hours. To avoid possible error the observations were made at night, as the cattle were then quiet, and there was nothing to cause an accidental rise of temperature. It was observed after the injections that in some of the animals the temperature remained stationary, in some there was a slight rise, in some a decided rise, and in some a very great elevation of the temperature. Six of the cows that showed decided febrile reactions were killed publicly at Mr. Gillingham's farm March 16th. All of them were clearly tuberculous, as was demonstrated by the macroscopic and microscopic examinations. Drs. John Guitéras, E. O. Shakespeare, and A. C. Abbott kindly coöperated in the post-mortem examinations, and in each case were fully satisfied as to the tuberculous nature of the lesions.

The twenty-one remaining suspected animals were sent to the Veterinary Hospital of the University of Pennsylvania, and at this writing thirteen animals that reacted to tuberculin have been killed. The autopsies have showed tuberculosis in each case. As the full reports will be published in The Medical News when the investigation is completed, it is unnecessary to go into details of the particular cases in this communication, but the following will indicate the action of the tuberculin in two of the cows:

Cow No. 13. Injected with 0.25 c.c. tuberculin on March 8th, at 6.15 P.M.

Time.	Temp.	Time.	Temp.	Time.	Temp.	Time.	Temp.
6.15	101⅘°	12.30	101⅘°	3.15	101⅘°	6.15	102⅕°

Killed March 30th. The bronchial glands were slightly enlarged, and contained small, cheesy nodes. One cheesy tubercle the size of a pea was found in the left lung. Two small tubercles were discovered in the liver.

Cow No. 35. Injected with 0.25 c.c. tuberculin on March 8th, at 6.50 P.M.

Time.	Temp.	Time.	Temp.	Time.	Temp.	Time.	Temp.
6 50	102°	12.50	101⅘°	3.40	103°	6.45	106⅘°

Killed March 29th. A few cheesy nodules were found at the root of the right lung. The liver contained many small, cheesy tubercles. The uterine mucous membrane was thickly studded with tubercles the size of shot—some fresh, some cheesy. Many nodules were found on the peritoneum covering the spleen. The sublumbar lymphatics were tubercular.

So far as my experience goes, tuberculin seems to be a safe agent for the diagnosis of tuberculosis in cattle.

Very respectfully yours,

Leonard Pearson, B.S., V.M.D.

Veterinary Department,
University of Pennsylvania.

AS TO LACTOPEPTINE.

To the Editor of The Medical News,

Sir: Not long since a travelling salesman called on me in the interest of his preparations. After showing me a number of his leading articles, he brought out his samples of lactopeptine, saying that it was hardly necessary to show this, as all physicians used it. I told him that I had never prescribed a grain of it, and, moreover, I never intended to do so. A very sarcastic and much surprised smile passed over his face, while he said that I was the first physician he had found that did not use it. He told me of one physician in North Carolina who employed it so extensively in his practice that his medical brethren had dubbed him "Lactopeptine Smith."

I have had experience in my student days with the prescription departments of several drug-stores, North and South, and have known something of the practice of several physicians, both of high and low standing. I found his remarks to be in a great degree true—some allowance, however, being made for the exaggeration of drummers. I am not surprised at medical men who are ignorant of all physiologic laws, and have no knowledge of scientific medicine, using lactopeptine. I am, however, very much astonished at a great many of the leading physicians of this country, together with a vast number of well-informed and intelligent medical men, for using and recommending to be used a compound nostrum that is contrary to physiology, thoroughly unscientific, and, as Austin Flint has expressed it, "a

therapeutic absurdity." Notwithstanding all this, one will find testimonials from some of the most prominent men that we have. A no less light than J. Lewis Smith, in his work on *Diseases of Children*, sixth edition, recommends a number of prescriptions containing lactopeptine. These men claim to be reasoners, having the facts before them, and to only act in anything after having found out, as nearly as possible, the reasons why. I can only explain it by thinking that they had been so engrossed with what they consider the "weightier matters of the law" that they have overlooked the simpler and plainer laws of digestion.

The only good thing that I can say of lactopeptine is that it is pleasant to the taste, and, provided it is free from all putrefactive ptomaïnes, that it is about as harmless a drug as can be used. Whenever a placebo is required the elixir will do admirably well.

The Pharmacal Association says that lactopeptine contains pepsin, pancreatin, ptyalin, hydrochloric and lactic acids. These agents are said to be combined in the same proportion as is found in the digestive apparatus. It further adds that they are all the agents necessary for perfect digestion, so that this compound is a remedy for indigestion in any form. What a priceless boon this would be to the sufferers from this almost universal malady if these absurd and preposterous statements were true. Lactopeptine, truly, is a gunshot prescription, which makes it useless for us to bother with accurately diagnosticating any particular form of indigestion. It promises to cure, regardless of the special trouble. Most of us are ready to pay considerable homage to anything promising to save us work, while, at the same time, giving us the desired results.

On looking into the formula of lactopeptine, it must appear to every scientific man at the most casual glance that it contains one agent not probably necessary for digestion, others that are chemically incompatible, and still others that have no relation to the subject or influence upon the malady.

I will make these statements plainer by going somewhat into details:

1. Lactic acid is probably a by-product of digestion, and not essential to it. The most approved analysis of the gastric juice does not contain any mention of lactic acid (analysis by Bidder and Schmidt). Landois and Sterling, in the second edition of their *Physiology*, say that "lactic acid is usually met with in the gastric juice, but it arises from the fermentation of carbohydrates in the food." In the third American edition of Foster's *Physiology*, in speaking of the composition of gastric juice, it is said: "Lactic and butyric and other acids, when present, are secondary products arising by their respective fermentation from articles of food or from the decomposition of their alkaline or other salts." Arising, as it does, from the fermentation mostly of the carbohydrates, one can always safely depend on lactic acid being present, so that if it fills any office its place will not be vacant.

2. Pepsin acts only in an acid medium on proteids. Ptyalin and pancreatin act only in an alkaline medium on proteids, carbohydrates, and hydrocarbons. Thus it is seen that we have two sets of agents combined of which the chemical and physiologic properties and functions are entirely opposed.

3. If the muriatic acid be put in lactopeptine in sufficient quantity to be of any value in indigestion, it will probably destroy the properties of pancreatin and ptyalin by the prolonged contact, especially during the heat of summer. This may not, however, take place.

4. If the pancreatin and ptyalin escape the muriatic acid in the compound, certain death and absolute destruction await them in the stomach, for there the hydrochloric acid is in sufficient amount, and will surely destroy all of the properties previously possessed by these agents. It may be argued that they are not entirely destroyed, but that their functions are simply held in abeyance while in the presence of gastric digestion, and that they resume their activity as soon as they pass into the duodenum, where they find an alkaline medium. To all who would thus argue, allow me to cite some authority which will tend to substantiate the correctness of the aforesaid statement. Landois and Sterling (quoting Chittenden, Griswold, and Langley) say: "Ptyalin is destroyed by hydrochloric acid or digested by pepsin." Foster, in his *Physiology*, in speaking of the action of saliva, says: "Indeed, the presence of even a small quantity of free acid, at all events of hydrochloric, not only suspends the action, but speedily leads to permanent abolition of the activity of the juice."

It is presumed that pancreatin means an extract of the whole juice, and is supposed to contain the main agents, namely, trypsin, amylopsin, and steapsin.

Foster, in speaking of trypsin, says that "it is destroyed by heating with dilute hydrochloric acid to 40° C." (slightly above the body temperature). The same authority says the "amylolytic ferment is identical with ptyalin," therefore it would meet the same fate when brought in contact with the hydrochloric acid.

Landois and Sterling say: "As trypsin is destroyed by gastric digestion, obviously it is useless to give extract pancreas to a patient along with his food." They say, speaking of amylopsin: "All conditions which destroy the diastatic action of the saliva similarly affect its action." Bartholow, in his *Materia Medica*, says: "Pancreatin differs from pepsin in that its action is promoted by an alkaline medium and destroyed by strong acidity." Yeo, in Hare's *System of Therapeutics*, quotes Chittenden, thus: "Hence it is obvious that pancreatic extracts or ferments given by the mouth can be of no value whatever, since the proteolytic action will at least be undoubtedly destroyed in the stomach before it reaches its normal sphere of action." W. W. Johnson, in THE MEDICAL NEWS, March 12, 1892, says: "The objections to giving pancreatin after a meal are so obvious that few have much faith in its efficacy; even a short stay in the stomach on its way to the duodenum will expose it to the action of the gastric juice, and its activity as a ferment will be destroyed."

It may be said that hydrochloric acid cannot have a destroying influence on pancreatin for the reason that dilute acid is used officinally in its extraction. This is true, but it is done at a moderately cool temperature. Heat it up to 98.6° F., and then see how much active pancreatin there is left. If there be any, add a little pepsin and some proteid substance, thus producing artificial digestion; now test for pancreatin, and it will be found that it will take a creative hand to bring back that which was lost.

5. Hydrochloric acid is in too small amount to be of any material value as a pepsin-aider.

6. The pepsin also is in too limited quantities to be of much worth except on the principles of homeopathy, and in that case the stomach would be convulsed with fear of being digested itself.

The pepsin in the compound may possibly be of some value. The same can hardly be said of the muriatic acid on account of the small quantity. These two agents are the only ones that possess any show of merit; the others, as has been shown, are absolutely worth nothing thus combined and given. The foregoing are facts, and I challenge scientific contradiction. They are not by any means new, yet in the light of all these our physicians in these United States have thus caused to be sold a proprietary preparation the very composition of which proves physiologic ignorance and the prescription of which is quackery.

Some physicians will say that lactopeptine may be wrong from a chemical standpoint, but that they are justified in its use from practical experience. Allow me on this point to relate a little incident occurring during my clerkship in a drug-store in Baltimore. One of the most prominent physicians of that city used very frequently to come into our store and get a dose of elixir of lactopeptine to relieve him of indigestion. He prescribed it extensively in his practice, and got from it, he told me, excellent results. On one occasion he came in and took a tablespoonful to relieve him of an attack of indigestion caused by an excess of oysters. Two hours later he came back on some other business. I asked him if he was relieved. He said, "Why, certainly; lactopeptine acts on me like magic." The elixir that we gave him, and that he dispensed in his prescriptions, was all right save in one particular, that it contained absolutely no lactopeptine. For economic reasons the proprietor always left this out. If the elixir relieved him or any of his patients by virtue of the contained drug, it must have been by some unknown dynamo-homeopathic force. Thus, in a limited way, one may see the value of competent human testimony as to practical results.

I would like the editor of The Medical News to expose in his characteristically fearless manner not only this worthless nostrum, but several others in the use of which the medical profession is gulled.

George Walker.

Yorkville, S. C.

URIC ACID AND RHEUMATISM.

To the Editor of The Medical News,

Sir: The Medical News of March 19, 1892, contains a criticism by Dr. James Wood on the article, "Is Uric Acid a Prime or Sole Factor in the Causation of Rheumatism?" in The Medical News of February 13, 1892. Dr. Wood denies that uric acid is produced in the system by a stimulating, nitrogenous diet and the use of alcoholic beverages. The statement, however, is substantiated by good authority. I might add that certain nervous influences, sedentary habits, too free ingestion of carbohydrates and hydrocarbous, CHO compounds, are also etiologic factors in its production. I made no assertion, as claimed, that a nitrogenous diet is stimulating.

Dr. Wood finally arrives at the same affirmative conclusion in his theoretic reasoning as myself, viz., that the suboxidation of proteid or nitrogenous foods by too free ingestion of the CHO compounds, and alcohol, results in the production of uric acid, which circulates through the tissues of the body.

Reasoning from cause to effect, the greater the amount of nitrogenous foods, CHO compounds, and alcohol ingested, the larger the quantity of uric acid that must be produced. The excess of uric acid in the urine above normal, as shown by examination, is the expression of the amount of these foods ingested above that oxidized and assimilated in the system.

It is also denied that "uric acid by its irritating influence upon the lower-grade tissues of the body gives rise to the rheumatic attack;" it is stated, however, that lactic acid is the factor producing it. The statement and reasoning are purely hypothetic, and so acknowledged by standard authorities. It is a well-known fact that uric acid is a purely excretory substance, eliminated from the system as a dangerous factor to its well-being—when produced under normal conditions; if present in excess of the power of the system to eliminate, then it circulates through the tissues as a powerful, irritant poison. Is it not logical to infer that many inflammatory processes, viz., rheumatism, neuritis, endocarditis, endarteritis, tubal nephritis, etc., result from this irritation?

These deductions are substantiated by clinical observations *that cannot be ignored.* These inflammatory processes are often associated, the urine at the same time showing an excess of uric acid, which is but the reflection of what is taking place in the body, viz., the excessive production of uric acid.

The treatment of rheumatism helps to confirm these deductions: limiting the quantity of nitrogenous foods, CHO compounds, and alcoholic beverages, so that the amount is not greater than the system can properly care for, assisting assimilation by change of habits (sufficient exercise and outdoor air), attention to the digestion and regulation of the functions of the liver by appropriate medication, and the administration of remedies to clear out the excess of uric acid from the system. If such a course be followed, the result is seen in the checking or "curing" of the rheumatic attack.

The final objection of Dr. Wood is to the education of our rheumatic patients in an intelligent watchfulness over the citadel of their souls: in the selection of proper food, abstinence from too free a nitrogenous diet and the imbibition of alcoholic beverages. I may also add that the CHO compounds should be used sparingly.

I regard the condition of the urine, as regards quantity, appearance, hyperacidity, etc., an almost infallible guide in rheumatic affections. The use of the mineral waters—Vichy, seltzer, Carlsbad, and the Manitou soda of my own State—is to be commended. The habitual use of the mineral waters by rheumatics is the best treatment (medicinal) to maintain a healthy equilibrium in the system.

Finally, Dr. Wood asserts that "If humanity should receive the education, all diseases of which the great etiologic factor is decreased nutrition and vitality would be greatly increased." Such an hypothesis seems to me absurd and not sustained by chemico-physiologic or pathologic facts. On the contrary, such an education,

if followed out, would tend to restore an already weakened nutrition and vitality, caused by the imperfect oxidation and assimilation of food-products, of which uric acid is but the expression, and prevent the dire results predicted by my critic.

Very respectfully,

W. E. SHOTWELL, M.D.

DENVER, COLORADO.

REPORTS OF CONTAGIOUS DISEASES.

To the Editor of THE MEDICAL NEWS,

SIR: There is no question that "an ounce of prevention is better than a pound of cure," and if, in the administration of the Health Department of a great city like Chicago, the spread of contagious diseases can be prevented by enforcement of the health laws of that city, there is compensation enough in the good health of the citizens to justify whatever measures are used to hold these diseases in check. Whether it be the "barbaric placard nailed to the door," or the rigid quarantine which temporarily houses the inmates of a home in which such contagious disease exists, or whether it be isolation in some contagious hospital, the end justifies the means. We have the satisfaction of knowing that the public health, at least, will not suffer. Chicago physicians should feel proud of their Health Warden, and lend him all honorable means and methods at their disposal to purge that city of its plague of contagious diseases. It is opportune, in the interest both of scientific medicine and public health, that statistics be gathered regarding the prevalence of typhoid fever in that great city. If some prominent physicians refuse to return statistics or reports of contagious diseases, because they are not paid for it, it will lead the medical world to believe that they too are a part and parcel of the cartoon presented in the *Inter-Ocean's* contest, representing Chicago as grasping for the "almighty dollar." If love for his profession and the record of its scientific progress, and the welfare of his own city, are not motives enough to prompt any Chicago physician to let the dollar question drop, then we believe that the old Hippocratic oath is entirely too barbaric for Chicago. The question, "What right has the city to ask a physician to do its work for nothing?" is answered by saying that the love of home, of city, of country, and of scientific medicine ought to make a physician regard his services as complimentary and above money value, when the knowledge he possesses is capable of being utilized to their good.

FRANK P. NORBURY, M. D.

JACKSONVILLE, ILLINOIS

A REQUEST FOR EMBRYOLOGIC MATERIAL.

To the Editor of THE MEDICAL NEWS,

SIR: During the last few years the kindness of several physicians has enabled me to procure for study about a dozen human embryos less than six weeks old. As a specialist in embryology, I ask if you can aid me in procuring more material. I would be indebted to any readers of THE MEDICAL NEWS who would send me such specimens.

Care should be taken that the specimen be not injured by handling; nor should it be washed with water. It may be carefully placed in a tumbler, and as soon as possible preserved in a bulk of alcohol (eighty per cent.) at least five times as large as that of the ovum. If the ovum is not larger than a pigeon's egg, it should not be opened before hardening. When a specimen is to be sent by express, it should be placed in a bottle completely filled with alcohol, with a very loose plug of absorbent cotton both above and below it.

Thanking you in advance for any aid that you may be able to give me,

I am, very truly yours,

F. MALL.

CLARK UNIVERSITY, WORCESTER, MASS.

REVIEW.

A SYSTEM OF PRACTICAL THERAPEUTICS. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; assisted by WALTER CHRYSTIE, M.D. In three volumes. Volume II.: Fevers; Diseases of the Respiratory System, Circulatory System, and Hematopoietic System; Diseases of the Digestive System. Large octavo, 1148 pages, with 96 illustrations. Philadelphia: Lea Brothers & Co., 1892.

IN an exhaustive treatise like that under review, in which the different sections represent the work of different writers, it is inevitable that there should be some inequality among its various parts. The very arrangement of the book tends to bring out in full force the points of contrast and comparison between the different articles. These differences were less marked in the first volume than they are in this, the second, partly because of the smaller number of subjects there considered and the smaller number of contributors. Even the casual reader cannot escape being struck by the fact that there is a good deal of repetition, not at all harmful, but perhaps obviable. This is particularly so with regard to the acute infectious diseases, in consideration of which, especially in indicating the lines of prophylaxis, a good deal of the same ground is gone over several times. The individual articles are not thereby weakened, but the interest of the consecutive reader is likely to lag. It is obvious that in many instances a mere recitation of the therapeutic procedures to be employed in a given condition could be made in a few lines; but interest is given to the subject by appropriate clinical and pathologic considerations. The work is not solely a Therapeutics in the narrow sense of the word. Its practical bearing must constitute its most valuable feature. A little more care in editing might have prevented several typographic and grammatic errors. We can only refer to the more important articles. Dr. Robert W. Taylor contributes an aggressive article on Syphilis. He speaks from a large experience; and while some may differ with him on certain points, it must be admitted that his opinions carry with them the weight of authority. Dr. J. Lewis Smith in an able manner discusses the treatment of Scarlatina, Measles, Rötheln, and Varicella. The article of Dr. William H. Welch on the treatment of Smallpox is a most valuable one. Dr. Frederick P. Henry presents a most thoughtful consideration of the treatment of Typhoid Fever. The article is one of the best in the volume. One statement is worthy quotation: "A bedsore has no

legitimate place in the clinical history of typhoid fever. It is neither a complication nor an intercurrent affection: it is a blunder." Dr. George Dock explains the mode of activity of quinine in malarial diseases, and describes the different methods of administering the remedy. Dr. J. C. Wilson presents a concise *résumé* of the measures to be employed in the treatment of Cerebro-spinal Fever. In his article on Diphtheria and Croup, Dr. J. Chalmers Cameron accepts the identity of the two affections, and necessarily advises a common treatment for both. Dr. James T. Whittaker contributes interesting papers on Asthma, Acute and Chronic Bronchitis, and Whooping-cough. The subject of Diseases of the Pleura has been most ably and fully handled by Dr. Rudolph Matas. Dr. T. Lauder Brunton presents a most interesting consideration of the Nervous Diseases of the Heart. The article on Acute and Chronic Gastric Catarrh, Gastric Atrophy, Gastric Ulcer, Gastric Cancer, and Gastric Dilatation, by Dr. D. D. Stewart, is most creditable to its author, and shows evidence of much careful thought. Dr. Edward Martin contributes a practical paper on Obstruction of the Intestines. Dr. Roswell Park furnishes the indications for treatment in Peritonitis, Appendicitis, and Perityphlitic Abscess. Dr. Charles B. Kelsey fully considers Diseases of the Rectum and Anus.

NEWS ITEMS.

On the Death of Dr. Agnew.—At a meeting of the Medical Faculty of the University of Pennsylvania, held Thursday, March 24th, the following minute was adopted:

The Faculty of the Medical Department of the University of Pennsylvania desires to place on record its profound grief at the irreparable loss sustained in the death of Dr. D. Hayes Agnew, and to express its thorough appreciation of the nobility of his personal character and the enduring excellence of his professional achievements.

Dr. Agnew was for years a regular attendant at the meetings of this Faculty, and his wise counsel, his unswerving advocacy of every progressive movement, and of all that tended to raise the standard of teaching and of the profession, have left their indelible mark on the history of its proceedings.

As a didactic lecturer he was unsurpassed. Without apparent effort and with a skill born of thorough knowledge and perfect mastery of his theme, each subject was presented to the student so clearly, simply, and directly, that it remained a part of his medical knowledge.

As a clinical lecturer, his enormous experience and his diagnostic and operative skill made him preëminent. That skill, which amounted to genius, was the foundation of his scientific greatness, and often enabled him at a glance to detect conditions which had eluded the search of others. No clinical observation, even in times long past, escaped his memory, and his experience, almost without exception, furnished a parallel to the rarest and most obscure cases. He had, in addition, the faculty of elucidating in a few words the methods by which he reached his conclusions, and this unusual combination of qualities gave him his unquestioned position as the leading teacher and practitioner of surgery in this country. His colleagues can bear witness to his warm friendship, which never failed in time of need; to his genuine love for his work and his eager desire to acquire every new fact that might benefit his patients; to his generous support of the feeble, the halting, and the unfortunate in the profession; to his respect for every honest opinion, even if it differed from his own; to his quick and ready sympathy and his tender treatment of all those who claimed either his personal or his professional help. His gentle courtesy and kindly bearing won the love of all with whom he came in contact. To the members of this Faculty—his students of years gone by, his colleagues of yesterday, and always his loving friends—his death comes as a personal bereavement.

At a meeting of the graduating class of the Medical Department of the University of Pennsylvania the following preamble and resolutions were adopted:

Whereas, It has pleased the Inscrutable to take from us our most beloved Emeritus teacher and counsellor D. Hayes Agnew;

Resolved, That the members of the medical class of 1892, of the University of Pennsylvania, do hereby express their sincere sorrow at the termination of this noble and mature, yet still fruitful life.

Resolved, That the memory of his pure, unselfish character shall be cherished by them as an inspiration in their life-work.

Resolved, That a copy of these resolutions be forwarded to the bereaved widow, and that they be published in the *University Medical Magazine*, in The Medical News, and the daily papers.

The Pan-American Medical Congress.—A legal form of application for Articles of Incorporation of the Pan-American Medical Congress was made in Cincinnati on March 15, 1892. At a meeting of the Incorporators held on the following day, regulations recommended by the Committee on Permanent Organization were adopted. The first Congress will be held at Washington, September 5, 6, 7, and 8, 1893. The following countries will be represented:

Argentine Republic, Bolivia, Brazil, British North America, British West Indies (including B. Honduras), Chili, Honduras (Sp.), Mexico, Nicaragua, Paraguay, Peru, Salvador, Colombia, Costa Rica, Ecuador, Guatemala, Haiti, Hawaiian Islands, Santo Domingo, Spanish West Indies, United States, Uruguay, Venezuela, Danish, Dutch, and French West Indies.

The languages of the Congress will be Spanish, French, Portuguese, and English.

There will be Sections in: (1) General Medicine, (2) General Surgery, (3) Military Medicine and Surgery, (4) Obstetrics, (5) Gynecology and Abdominal Surgery, (6) Therapeutics, (7) Anatomy, (8) Physiology, (9) Diseases of Children, (10) Pathology, (11) Ophthalmology, (12) Laryngology and Rhinology, (13) Otology, (14) Dermatology and Syphilography, (15) General Hygiene and Demography, (16) Marine Hygiene and Quarantine, (17) Orthopedics, (18) Diseases of the Mind and Nervous System, (19) Oral and Dental Surgery, (20) Medical Pedagogics, (21) Medical Jurisprudence.

Contributors are requested to forward abstracts of their

papers, not to exceed six hundred words each, so as to be in the hands of the Secretary-General, Dr. C. A. L. Reed, Cincinnati, Ohio, not later than the tenth of July, 1893. These abstracts will be translated into English, French, Spanish, and Portuguese, and will be published in advance of the meeting for the convenience of the Congress.

The following have been elected Trustees: Dr. W. T. Briggs, Tennessee; Dr. George F. Shrady, New York; Dr. P. O. Hooper, Arkansas; Dr. S. S. Adams, District of Columbia; Dr. H. O. Marcy, Massachusetts; Dr. J. F. Kennedy, Iowa; Dr. H. D. Holton, Vermont; Dr. L. S. McMurtry, Kentucky; Dr. N. S. Davis, Illinois; Dr. Levi Cooper Lane, California; Dr. I. N. Love, Missouri; Dr. Hunter McGuire, Virginia; Dr. J. C. Culbertson, Illinois; Dr. A. Walter Suiter, New York; Dr. C. H. Mastin, Alabama.

Drs. L. S. McMurtry (Ky.), I. N. Love (Mo.), and W. W. Potter (N. Y.) were designated to act as members of the Executive Committee.

A Laryngectomy in Jefferson Medical College Hospital.—At his regular clinic, on April 1st, with the assistance of Professor W. W. Keen and the Surgical Chief, Dr. O. Horwitz, Professor J. Solis-Cohen excised the entire larynx and the first ring of the trachea from a man forty-five years of age, leaving the epiglottis in position. The case was one of extensive sarcoma of the larynx, protruding externally. Prophylactic tracheotomy had been performed for Dr. Cohen by Professor Forbes at one of the clinics of the latter, and subsequently Dr. Cohen, with the assistance of Dr. Forbes, had removed an external growth with a large circumference of integument, and had then split the larynx and shelled out the intra-laryngeal portion of the growth. Recurrence ensuing, laryngectomy was practised as the sole procedure adequate to effective removal.

The operation was quite difficult on account of changes due to the previous operations. It consumed one hour, two ounces of chloroform, carefully administered by Dr. Williams, sufficing to keep the patient anesthetized.

A tampon-canula was introduced, and the trachea was packed with gauze above this. A soft stomach-tube was introduced through the wound, the edges of which were loosely stitched without any dressing in the pharynx, Dr. Cohen having observed that dressings in the pharynx produce a continuous desire to swallow, which is very annoying to the patient. The patient was put to bed with his head lower than the shoulders, so as to secure drainage through the mouth.

As we go to press we learn that the patient has been fed by enemata; that the tampon-canula was removed from the trachea on the third day and replaced by an ordinary double canula, and that the patient was able to swallow a few ounces of milk on the fourth day, so that thus far there has been no use for the stomach-tube. The case is progressing very satisfactorily.

Philadelphia Polyclinic Hospital.—An examination for the position of two internes and two externes in the Hospital of the Philadelphia Polyclinic will be held May 3, 1892. The Committee will meet and examine the candidates on the date named, at 8 P.M., in the Hospital building, Lombard Street, west of Eighteenth.

A number of clinical assistants will be appointed. Application should be made to the Committee: G. E. de Schweinitz, M.D., H. Augustus Wilson, M.D., S. Solis-Cohen, M.D., T. S. K. Morton, M.D., and Harris A. Slocum, M.D.

The Association of Military Surgeons of the National Guard of the United States will hold its second annual meeting at St. Louis, Mo., April 19, 20, and 21, 1892. Papers will be read and discussed by regular Army and Navy and National Guard medical officers.

Teaching the Deaf.—The annual summer meeting of the American Association to Promote the Teaching of Speech to the Deaf will be held from June 22d to July 1st inclusive, at Crosbyside Hotel, Lake George, N. Y. This will in no wise conflict with the proposed conference of principals and superintendents of deaf and dumb institutions in Colorado.

BOOKS AND PAMPHLETS RECEIVED.

Announcement of the Twenty-ninth Annual Course of Lectures of the Medical Department, University of California, 1892.

The Pocket Pharmacy, with Therapeutic Index. By John Aulde, M.D. New York: D. Appleton & Co., 1892.

Die Behandlung der Tuberkulose mit Tuberkulocidin? Verlaufige Mitteilung von Professor Dr. E. Klebs, in Zurich. Fünfte Auflage. Hamburg und Leipzig: Verlag von Leopold Voss, 1892.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-third Annual Session, at Baltimore, Md., April, 1891. Baltimore: Griffith, Curley & Co., 1891.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., assisted by Walter Chrystie, M.D. Vol. II. Fevers; Diseases of the Respiratory, Circulatory, and Hematopoietic Systems; Diseases of the Digestive System. With Illustrations. Philadelphia: Lea Bros. & Co., 1892.

Observation and Experiment in Phthisis. By Thomas J. Mays, M.D. Reprint, 1892.

Obstetric Problems. By D. T. Smith, M.D. Pamphlet. Illustrated. Louisville: J. P. Morton & Co., 1892.

Acute Inversion of the Virgin Uterus. By William A. Edwards, M.D. Reprint, 1892.

An Address upon the late Joseph Leidy, M.D., LL.D.: His University Career. By William Hunt, M.D. Delivered November 17, 1891, before the Alumni and Students of the Medical Department of the University of Pennsylvania. Philadelphia: Collins Printing House, 1892.

Report of the Commissioner of Education, 1888–1889. Two volumes. Washington: Government Printing Office, 1891.

Transactions of the American Surgical Association. Vol. IX. Edited by J. Ewing Mears, M.D. Philadelphia: William J. Dornan, 1891.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., F.R.C.P. Lond., Professor of Medicine in the Johns Hopkins University of Baltimore, etc. New York: D. Appleton & Co., 1892.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

WHAT RELATIONSHIP HAS CHRONIC NEPHRITIS TO PULMONARY TUBERCULOSIS?

BY S. J. RADCLIFFE, M.D.,
OF WASHINGTON, D. C.

WHEN a person has suffered in early life from all of the symptoms of pulmonary tuberculosis, the progress of which was soon arrested or aborted, leaving behind no sufficient physical signs to indicate its former existence, and he afterward lives apparently a comfortable and healthy life for a long period, dying later of chronic nephritis we are naturally inclined to wonder at the circumstance, to look for the cause of the transition from the one to the other, and to think that there must have been some connection between the two diseases, or that the one was the sequence of the other. It is in this sense that I view the relationship of chronic nephritis to pulmonary tuberculosis, and I give the following cases in illustration of my meaning:

A medical student, with no especial family history of pulmonary disease, was during youth sparely built and delicate. He had a cough and frequent slight hemorrhages from the lungs, during his medical pupilage, and every symptom pointed to early incipient pulmonary tuberculosis. After graduation, his condition growing markedly worse, he was compelled to seek outdoor exercise and fresh air by horseback-riding, seeing his patients on horseback, and under treatment he gradually improved in general health, the hemorrhages ceased, all the physical signs abated or disappeared, and toward his fortieth year he became quite stout, weighing about one hundred and sixty-five pounds, and seemed quite robust, giving his friends no further uneasiness on account of any tuberculous tendency. At about his forty-seventh year, symptoms of nephritic trouble began to reveal themselves, with increased flow of urine, albuminuric retinitis, and loss of sight of the left eye and impaired sight in the right, palpitation and irregular action of the heart, and dyspnea; and his urine was loaded with albumin and granular and fatty casts. How long this condition had lasted could not be ascertained. His friends were first apprised of it by his loss of sight, and the ophthalmoscope revealed its true nature. Knowing his condition he refrained from speaking of it, as he well knew the fatal issue. He continued to attend to his practice until about a month before his death, when he took advice and gave up all business. His symptoms grew rapidly worse, the secretion of urine almost ceased, convulsions came on, in one of which he died, at the age of fifty years. At no time was there any evidence of dropsy.

The second case was that of a man, a civil engineer by profession, with a history of tuberculosis in some portions of his family. So far as he knew there had been no cases of kidney-disease in his family. He was not particularly strong during youth and maturity, but finished his time in learning his profession without serious difficulty. At twenty-two years of age he began to cough and expectorate, and occasionally spat blood, amounting sometimes to slight hemorrhage. He lost appetite and flesh and had night-sweats. Auscultation and percussion revealed a limited area of dulness at the left apex, with moist râles. He was advised to spend the winter in the South, to be out in the open air as much as possible, with moderate exercise on horseback, if possible, and to have a certain amount of treatment. On his return, after an absence of three or four months, his condition had greatly improved, and he was able to resume his occupation. In the course of the next five years he gradually gained in health, and at the end of that time had apparently recovered from his lung-trouble. The area affected had seemingly not extended, and the examination showed what was possibly a mere cicatrix of the former diseased portion. In his thirty second year, he had pain in the back, of a gnawing, disagreeable character, with blinding headaches and stiffness of the calves of the legs, and great despondency. On examination he was found to have albumin and granular casts in his urine, but not to any great extent; the diagnosis was chronic nephritis. His trouble increased during the next three years, preventing his continuous attention to business, at the end of which period he died in a state of uremic coma, in his thirty-fifth year. He had occasionally edema of the lids and cheeks and stiffness of the calves, but no distinct dropsy was observed at any time during his illness.

The third case was that of a man of extensive business habits and great energy. He had a decided family history of pulmonary tuberculosis, which he always feared. During his youth and early manhood he was tall and spare and inclined to stoop. At about his twenty-fifth year, while dancing at an evening entertainment, he suddenly felt a free gush of hemorrhage from the lungs. He felt sick and alarmed, went home, and made up his mind that he was about to die, but by advice he began treatment. He walked and rode a great deal, and was much of his time in the open air. The hemorrhages stopped after a few months, and gradually the lung-affection ceased to occasion any uneasiness, and there was left at the end of the next three years only a slight dul-

ness at the right apex and some dry bronchial breathing, somewhat cavernous. He became stout in his thirtieth year and seemingly strong, and was able to attend to his large business interests. He was not aware of any kidney-disturbance until about his fiftieth year, when he became convinced that something was wrong. He began to drink mineral waters recommended to him, and went several times to the Springs, but with varying results. He went on in this uncertain way for nearly two years, losing much time from business, often not able to attend to any. On examination he was found to have chronic nephritis in the form of contracted or cirrhotic kidney, the progress of which had been slow and had continued for probably ten years. During the last few years of his life he had variable health, but it rapidly declined toward the last, and he died in uremic coma, at the age of fifty-nine years, no dropsy having been discovered at any time.

I am not aware that any extended notice has been taken with reference to the relationship of chronic nephritis to tuberculous disease of the lungs. Pulmonary tuberculosis has frequently been observed as a complication of chronic nephritis, and the latter is often seen as an associated condition, and also as a result of certain wasting diseases, such as scrofula, caries, necrosis, syphilis, and general tuberculosis; but as to the causal relation of the two affections, to the etiologic significance of those things that bear equally and alike upon either or both—in the sense that, while each may be an independent affection, both are each subject to the same etiologic factors—this view of the subject seems to have been in a measure overlooked, or perhaps passed by as a subject not promising any especial compensating results. While these complications may exist—chronic nephritis with tuberculosis, and tuberculosis with chronic nephritis—it is also true that tuberculosis of the kidney may occur alone, as the result of general miliary deposit, or independently of disease of the lungs, just as tuberculous disease of the lungs may be confined entirely to those organs without complications in other organs.

It often happens that disease of the kidneys—chronic nephritis—is not discovered in persons dying from tuberculosis of the lungs until a post-mortem examination is made; during life, examination of the urine of patients suffering from tuberculous disease of the lungs will frequently disclose the existence of chronic nephritis, which had not previously been suspected. It is in the sense therefore of total independence of the two affections and total distinction as to locality, and yet governed by the same law of contact and development, and placed in the same etiologic category, that I use the words relationship of chronic nephritis to pulmonary tuberculosis; and based upon this as a predicate, I would say that either chronic nephritis or tuberculous disease of the lungs may occur in a subject predisposed, or by contact; that the exciting cause may alight upon either the lungs or kidneys indiscriminately, whichever at the time may be the most vulnerable, just as one may have from the same exposure a tonsillitis, or an articular rheumatism, or a peritonitis, or dysentery.

I have often thought of the subject in this light, and from frequent clinical experience or observation, I have been strongly impressed with the thought that some such connection exists. Of course, this connection would be difficult of proof or demonstration, but not more so than many other problems in medicine—not harder than the distinction of tuberculosis of the lungs itself or its therapy, or the true pathology of diseases of the kidneys. We know that these affections are accompanied by certain signs and symptoms, are of certain or uncertain course during life, and reveal certain anatomic changes after death; beyond this we know comparatively nothing. Why the bronchioles, air-cells, and parenchyma of the lungs should be attacked by a particular form of inflammation of a destructive character, with a particular kind of suppuration in which bacilli are found, and why the tubules, vessels, glomeruli, Malpighian tufts, and cortical substance of the kidneys should be the subject of another peculiar inflammatory process of an equally destructive nature, the chief characteristics of the discharge from which are albumin and certain tubular, granular, fatty, or waxy casts, cannot be said to be "in a nutshell," or explained in a few words. And it is just as probable, if bacilli are the cause of pulmonary tuberculosis, that chronic nephritis, "consumption of the kidneys," may have the same or similar origin, for it is just as probable that bacilli could have ingress by way of the alimentary tract, through the circulatory channels, and find a lodgment in the kidneys, as that bacilli should find their way to the lungs by way of the respiratory apparatus. Whether the bacilli are the same is another question. Tubercle-bacilli have been discovered, but I am not sure if bacilli have been found in the kidneys or its discharges, or, indeed, whether any attempt has been made to find them, or even if attention has been directed that way.

Grainger Stewart says, in his *Treatise on Bright's Disease of the Kidneys*, under the head of Causal Complications: Tubercle of the lungs (he says he employs tuberculosis in the old sense, as including all the forms of "phthisis," and not in the more accurate sense now generally recognized) existed in about one-half of all the cases of waxy kidney which I have examined in the Infirmary; tubercle of the intestines in about 18 per cent. In a very considerable proportion of these cases it appeared that tuberculosis was the cause of the renal disease. When we analyze, he says, the relationship more closely

we find that tubercle of the lungs was especially associated with the earlier stages; for, of those fatal in the first stage it was present in 66 per cent.; of those in the second, in 60 per cent.; and of those in the third, in 35 per cent. When we compare, he continues, this with what we find in other forms of renal disease, the relationship between tubercle and the waxy degeneration becomes manifest, for, with the inflammatory forms it was present only in 7 per cent.; with the contracting, in 23 per cent.

These post-mortem examinations were made with reference to, and mainly to discover the extent of, the renal lesions following fatal cases of chronic nephritis and only incidentally that of the pulmonary disease. It is more than probable that if such systematic investigations were made in all cases dying from pulmonary tuberculosis, in a majority of them, doubtless, extensive lesions of the kidneys would be found, showing a certain amount of changeability or compensating action, which would be very remarkable, and which, so far, has not been accounted for. It shows, however, that this conjoint or conjugate pathologic condition is common if not general—much more so, indeed, than has been supposed or admitted; and if this changeability is proved or admitted, then a common bacillary origin must also be admitted. And the question that would chiefly concern this inquiry would be whether the same morbid material, whether bacillus or other infection, missing the lungs in its ingress, can pass on and set up in the kidneys the same pathologic process, produce an organic lesion such as it would have developed if it had obtained a lodgment in the lungs, or if the same lesion, having been eradicated from the lungs, is capable of being fully reproduced in the kidneys. I know of no answer to these questions from present knowledge. Clinically speaking, we make a wide difference in the treatment of the two affections—chronic nephritis and pulmonary tuberculosis—we treat them as quite distinct and separate diseases, and from very different standpoints, and without reference to any apparent similarity, either in origin or symptoms. The question would come up later, whether or not we should employ the same therapeutics for both diseases, and what would be the result of such treatment.

RECENT ADDITIONS TO THE MATERIA MEDICA.

By W. A. N. DORLAND, M.D.,
INSTRUCTOR IN GYNECOLOGY, PHILADELPHIA POLYCLINIC.

In preparing this review of the more recent additions to the materia medica, the main difficulty has consisted rather in the selection, out of the embarrassment of material at hand, of those remedies that have been proved of real worth, than in any lack of material from which to draw. Care has been taken, so far as was possible, to throw aside all drugs of doubtful merit, in order that room might be given to those that experimental and clinical therapeutics have demonstrated to be valuable acquisitions to the materia medica of the day. Following in the wake of the rapid strides that are being made in organic chemistry, these newer remedies are necessarily largely synthetic in character. Only a few are the result of botanic research.

Antisepsin, $C_6H_4BrNHC_2H_3O$. Para-mon-brom-phenyl-acetamide, or bromated antifebrin, occurs as tasteless, odorless crystals, melting at 328° F., insoluble in cold water, and with difficulty soluble in hot water, slightly soluble in glycerin, but readily so in alcohol and ether. In large doses it gives rise to evanescent cyanosis, and will produce death by paralysis of respiration. Applied to wounds and ulcers in the form of a powder, rapid improvement ensues, the granulations flattening and cicatricial centers appearing, with relief of pain and itching. In its analgesic action it resembles antifebrin. It is also an antipyretic. *Dose*—one grain, four times daily. *Antipyretic, analgesic.*

Antithermin, $C_6H_5N_2HC - (CH_3) - CH_2COOH$. Phenylhydrazin-levulinic acid, a coal-tar derivative, allied to antipyrin, but feebler in action, is prepared by the direct combination of phenylhydrazin with aceto-propionic acid. It occurs as colorless crystals, insoluble in water, and with difficulty soluble in alcohol. It has been found to reduce temperature by diminution of heat-production with increased heat-dissipation, but its administration is likely to give rise to gastralgia; hence it is not much used. *Dose*—from 4 to 8 grains, in pill or wafer. *Antipyretic, analgesic, antiseptic.*

Aseptol, $C_6H_4OHSO_3OH$. Sulphocarbolic acid, orthophenol, sulphonic acid, sozolic acid, or sulphobenzidic acid, as it is variously termed, is prepared by the direct combination of carbolic acid and concentrated sulphuric acid. It occurs as a heavy, syrupy, reddish liquid, with an astringent taste and a slight odor of phenol, an acid reaction and a specific gravity of 1.400. It crystallizes in small deliquescent needles, which are very soluble in water, alcohol, and glycerin; a 33 per cent. solution is recommended in preference to carbolic acid as an antiseptic, being less caustic than the latter, and hardly at all toxic. Tucker regards it as a weaker antiseptic than carbolic acid. A 3 per cent. solution has been recommended in gingivitis and pyorrhea; under its action the swelling is reduced, the flow of pus arrested, and the gums restored to their natural condition. It may be advantageously employed for some time in affections of the skin, eye, and bladder. Internally it may be exhibited in relatively large doses in the treatment of pharyngitis and dipbtheritic laryngitis. *Dose—internally* Vigier employs a lemonade in the proportion of a dram and a half of aseptol to a quart of water; *externally*, a solution of from 1 to 10 per cent. *Antiseptic.*

Benzo-naphthol or naphthol-beta benzoate, $C_{10}H_7O(C_7H_5O)$ is prepared by combining benzoic acid with naphthol-beta, and occurs as a whitish, crystalline, odorless, and tasteless powder, melting at 110° C., almost insoluble in water at ordinary temperature, very slightly soluble in ether, more so in alcohol, and readily soluble in chloroform. It has but slight toxic effects, and its antiseptic properties are comparable with those of any other

substance in use as an intestinal antiseptic. In the body it is broken up into naphthol-beta, which remains in the intestinal tract, and benzoic acid, which is eliminated in the urine after having formed alkaline hippurates. It favors diuresis and markedly diminishes urinary toxicity. Burton has used it with marked benefit in typhoid fever and tuberculous bowel-ulceration. *Dose*—daily 75 grains to an adult, 30 grains to a child, administered in from 2 to 8 grain doses in a cachet or suspended in a vehicle. *Intestinal antiseptic.*

Benzosol, $(O.COC_6H_5)C_6H_4(O.CH_3)$. Benzoyl-guaiacol, which is prepared from guaiacol, is an agreeable and harmless substitute for creasote in tuberculous affections. It occurs as a white crystalline powder, tasteless, with a faint bitter-almond odor, almost insoluble in water, soluble in ether and chloroform. It is decomposed in the digestive tract into guaiacol and benzoic acid, and the former is eliminated in the urine and saliva within half an hour after ingestion. It exerts a beneficial influence upon the general nutrition and consequently increases the resistance of the patient to the disease. It is also recommended as an antipyretic and antiseptic. *Dose*—from 4 to 10 grains by the mouth; as it is decomposed by hot water it must be exhibited in powder form. *Antituberculotic, antipyretic, antiseptic.*

Bromamide, $C_6H_2Br_3NH.HBr$. A bromine-compound of the anilide group, containing 75 per cent. of bromine. It occurs as colorless, acicular crystals, almost odorless and tasteless, melting at 243° F., and volatilizing at 310° F. without change, subliming in beautiful, feathery crystals. It is insoluble in benzine and hot or cold water, slightly soluble in cold, and more so in boiling alcohol, readily soluble in chloroform, ether, and the fixed oils; its solution is neutral in reaction. It has been adminis- as an antipyretic and antineuralgic in typhoid fever, acute and chronic articular rheumatism, rheumatic fever with acute endocarditis, chronic nephritis with dropsy, and various forms of neuralgia, and has been found to have the power of reducing the temperature in most febrile diseases from 1° to 2.5° F., without producing excessive sweating. It has no pronounced diuretic action, and is free from any unpleasant symptoms as regards the digestive tract. *Dose*—to adults, from 10 to 15 grains several times in the day; to children, from 1 to 5 grains. It may be given in capsule or wafer, dry, upon the tongue, or suspended in a fluid. *Antipyretic, antineuralgic.*

Burra Gookeroo. The spring carpels of *Tribulus lanuginosus*, a plant belonging to the typophyllaceæ or guaiacum order, and growing extensively throughout the East. It has been used largely as a diuretic, and has also been employed as a remedy for the relief of nocturnal emissions. It is possessed of tonic and aphrodisiac properties, and has been found to exert a beneficial effect in gonorrhea and dysuria. In the form of the infusion or decoction it has been employed, together with other remedies, for painful micturition and impotence. *Dose*—of the fluid extract, from 20 to 50 minims; of the infusion, from 1 to 2 drams; of the syrup, which is an excellent form of the drug for administration to children, from ½ to 1 dram. *Diuretic, aphrodisiac.*

Chinolin (*Quinolin*), C_9H_7N, is prepared synthetically from aniline, nitrobenzol, glycerin, and sulphuric acid, but may also be obtained as a derivative of cinchonine and quinine by dry distillation. It is a transparent, oily liquid, slightly tinted, with a peculiar, penetrating odor, slightly soluble in water, but freely so in alcohol, ether, and oils. Its color deepens on keeping. The *tartrate*, being more soluble, is better adapted for use in medicine. It occurs in odorless, white crystals, with a nauseating taste, soluble about one in forty of water. Chinolin is a powerful antiseptic and antipyretic. Internally it is used in enteric fever and in intermittent fever, and in periodic neuralgias. An aqueous solution forms an excellent antiseptic injection for gonorrhea, while it is highly recommended as a gargle for diphtheria in the following formula: One part of chinolin in 50 of rectified spirit and 500 of peppermint water. A solution of 4 scruples of chinolin in 3½ ounces of alcohol may be applied with a brush to the diphtheritic membrane. *Dose*—of chinolin, from 3 to 10 minims; of the tartrate, from 5 to 15 grains. *Antiseptic, antipyretic.*

Chlorethyl, C_2H_5Cl. Mono-chlor-ethane or ethyl chloride, is prepared by saturating an artificially cooled alcoholic solution of zinc chloride with hydrochloric acid gas. At ordinary temperatures it exists as a gas, but it may be readily compresed into a colorless, mobile liquid, with a pleasant etheral odor and a sweetish, burning taste, a specific gravity of 0.9214, boiling at from 50° to 53.6° F., and burning with a green flame. It is slightly soluble in water, but readily so in alcohol. Owing to its low boiling-point it is admirably adapted to the rapid production of local anesthesia, and for this purpose it is furnished in glass tubes holding ten grams of the fluid. When used, the end of the tube is broken off and the latter held at a distance of from six to ten inches from the spot to be anesthetized, thereby avoiding excessive and useless cold. Chlorethyl is of service in all forms of minor and dental surgery and in the treatment of facial and intercostal neuralgias. Its only drawback is its great inflammability. *Local anesthetic.*

Chlorphenol, $C_6H_4Cl.OH$. Mono-chlor-phenol is a very volatile fluid with a vapor heavier than air. It is possessed of marked antiseptic and antituberculotic properties. When applied to wounds, ulcers, and discharging glands remarkable improvement follows. It has been strongly recommended for inhalation in diseases of the respiratory passages. Ozena, laryngitis, bronchitis, and more particularly tuberculous affections are beneficially influenced after commencing the inhalations. The bacilli rapidly disappear from the sputum, the cough diminishes, fever is reduced, appetite and sleep soon return, and the body-weight increases. Passerini has thus treated five cases of tuberculous disease of the lungs, all recovering in from two to six months from the beginning of the treatment. The inhalations are easily borne in advanced pulmonary tuberculosis, no injurious effects arising from their continuous use. *Antituberculotic, antiseptic.*

Cineraria Maritima. Freshly expressed juice of the leaves is employed in the treatment of cataract without operation. Its use occasions no irritation or inflammation beyond a slight sense of burning pain that lasts for a minute or two. Several reports of steady improvement following its employment are noted, and one case is quoted in which a cure was affected in two months. *Dose*—2 minims, to be dropped into the eye three times daily.

Dermatol, $C_6H_2(OH)_2.CO_2Bi(OH)_2$. Bismuth subgallate is an extremely fine, non-hygroscopic, odorless, saffron-yellow powder, stable in air and light, insoluble in ordinary solvents. On account of its insolubility, its antibacterial action is limited to the area in which it comes in contact with the pus-microbes, the drug in this respect resembling iodoform. In addition to its direct antiseptic action, it has a desiccating influence, so that the development of bacteria is inhibited by the drying of their pabulum. Dermatol gives rise to no irritation and is not absorbed. It has been largely used in surgery, dermatology, and gynecology. It is of special service in affections or lesions associated with copious secretion. Under its influence the secretion rapidly diminishes. It is effective in purulent affections of the eye and ear; ulcers of the legs and feet that have resisted all other treatment promptly yield to it. Glaeser, of Breslau, reports favorably of it as an application for superficial wounds. In various skin-affections a 10 per cent. ointment with vaselin or lanolin, or a powder diluted with starch or talc may be employed. The following formula may be employed as an ointment: Bismuth subgallate, 10 parts by weight; vaselin, 10 parts; and lanolin, 80 parts; to be applied to ulcerations. Dermatol is not as serviceable in local tuberculous affections as iodoform, nor should it be used on torpid wounds and ulcers, for which stimulating remedies are indicated, nor in fresh phlegmonous wounds and freshly-opened abscesses. *Internally*, it is said to be of value in affections of the stomach and intestines. It is non-poisonous and well borne. *Dose*—two drams daily. *Antiseptic.*

Disinfectol. A substance analogous to creolin and lysol. It is a brownish-black, oily liquid, having a specific gravity of 1.086, and with an alkaline reaction. It contains hydrocarbons, soaps of resin, and combinations of soda and carbolic acid. It has very energetic disinfectant properties, and is used in the form of from 2 to 5 per cent. emulsion. *Disinfectant.*

Diuretin is a double salicylate of theobromine and sodium, containing 50 per cent. of the former. It is a white powder, with a very bitter taste, freely soluble in water. It is very unstable, and is decomposed by all acids, even by CO_2 of the atmosphere. Internally it causes no irritation of the stomach or kidneys; nor does it increase arterial tension. It has been found useful in pleuritic effusion, its diuretic action usually manifesting itself within the first twenty-four hours. No cumulative effects have been observed, but occasionally a slight diarrhea is produced. Under its influence, dyspnea, bronchitis, and anorexia, together with the general condition, are improved. When administered in acute nephritis, the quantity of urine voided is greatly increased. It decreases cardiac dropsy and strengthens the pulse. *Dose*—90 grains daily in 15-grain doses. It is best administered in cachets, or as a clyster, dissolved in lime-water to prevent interference with its action by the gastric juice. It may be given in solution in warm water, or in gelatin-coated pills. The bitter taste may be disguised by the addition of some aromatic oil. *Diuretic.*

Ethylene Bromide, $C_2H_4Br_2$. A light brownish-colored liquid with an odor resembling that of chloroform, and a taste sweetish at first, but afterward burning. Its specific gravity is 2.163, and it contains 90.9 per cent. of bromine. It is insoluble in water, but readily mixes with alcohol and oil. It boils at 300° C., and at the freezing-point solidifies into a snow-white crystalline mass. It has been used with great benefit in epilepsy, the convulsive attacks under its influence becoming rarer, shorter, and milder. *Dose*—from ¼ to 2¼ minims two or three times daily. It may be administered in milk, according to Donath, his favorite formula being: Ethylene bromide and spirits of wine, of each 32 minims; oil of peppermint, 2 minims; of this from 5 to 15 drops may be administered two or three times daily. A 5 per cent. emulsion may be employed thus: Ethylene bromide, 35 minims; emulsio oleosa (containing two parts of expressed oil of almonds, one part of powdered acacia, seventeen parts of water), 3¼ ounces; oil of peppermint, 2 drops. Of this, adults take 30 drops in a small wineglassful of sugar-water twice or thrice daily, increasing the dose every third day successively to 40, 50, and then 70 drops. A child of eight or ten years should begin with from 10 to 20 drop doses twice daily. An oily solution may be used subcutaneously. *Anti-epileptic.*

Eucalyptol is composed of 6 parts of salicylic acid, 1 part of carbolic acid, and 1 part of essence of eucalyptus. It possesses an aromatic odor and a burning taste, is almost insoluble in water, but is soluble in alcohol, chloroform, ether, glycerin, alkaline solutions, and ammonia. It is said to be an excellent dressing for wounds, since it does not produce albuminates, which inhibit antisepsis. Internally, it may be administered in acute rheumatism, typhoid fever, pulmonary catarrh, and affections of the urinary passages. *Dose*—from 2 to 2½ drams per diem. *Antiseptic.*

Euphorin, $C_9O_2H_{11}N$. Phenylurethane, or ethyl phenylcarbamate, is prepared by the action of chloroxycarbonic acid upon aniline. It occurs in fine white needles, with a slightly acrid taste, melting at 52° C. It is sparingly soluble in cold water, and slightly so in boiling water, but is soluble in all proportions in alcohol and ether. It is recommended as a safe and rapid antipyretic, the antithermic action being due to dilatation of the peripheral vessels, with elevation of the peripheral temperature, and at the same time a diminution of the central temperature. Its action is attended with profuse sweating and flushing of the surface. It has no influence upon the normal temperature. It is largely consumed in the body, only a small portion being eliminated in the urine as para-oxyphenylurethane. Santoni regards it as an energetic antipyretic without any attendant danger, and exerting a favorable action upon the general condition. It has also been employed as an antirheumatic, and successfully by F. Adler in pulmonary tuberculosis. As an analgesic it has been largely used in the various forms of neuralgia, and in ovarian and uterine pains. According to Oliva it is a true antiseptic, being as efficient as iodoform. G. Peroni has used it in dermatologic practice in powder or alcoholic solution (from 10 to 50 to 100) or in the form of a pomade with lanolin. He has used it successfully in lupus, burns to the second degree, herpes zoster, seborrhea, eczema, and syphilitic ulcers. It corrects unpleasant odor; granulations become healthy; and the diffusion of venereal virus is hindered. No toxic effects

are noted. *Dose*—from 5 to 30 grains daily, in medicated cachets, in solution in white wine, or suspended in a mucilaginous potion. *Antipyretic, analgesic, antiseptic.*

EUROPHEN. Isobutylorthocresol iodide, a preparation of iodine, occurs as an amorphous, fine, yellow, somewhat sticky powder, which should be protected from light and moisture. It has a moderately strong aromatic odor, is insoluble in water and glycerin, but readily soluble in ether, alcohol, chloroform, and oils. It is five times lighter than iodoform, and possesses the same anti-tuberculous effect. It adheres readily to the skin and to wounds, and is excreted in the urine in the form of iodine. Insufflations of europhen promptly cause the healing of chancroids and chancres. Europhen may also be used hypodermatically in syphilis, a 1 per cent. solution in olive oil being employed, of which from 7 to 15 minims are injected daily. In tuberculous abscesses, injections of a glycerin emulsion may be used. From 5 to 10 per cent. ointment is recommended in skin-diseases. *Antiseptic, antituberculotic.*

EXALGIN, $C_6H_5NCH_3C_2H_3O$. Methylacetanilid, a benzene derivative allied to phenacetin, occurs as colorless, slightly bitter needles, or large tablets; it is slightly soluble in cold water, more so in hot, and freely in dilute alcohol. It is a valuable analgesic, and also an antipyretic and antiseptic, but to a less degree. In toxic doses it produces trembling and paralysis of the respiration, with collapse. It causes diminution in the quantity of urine and of sugar in diabetes, and has been suggested for employment in influenza. *Dose*—from ½ to 4 grains, not exceeding 14 grains, in twenty-four hours. It may be given in the form of a mixture, 5 grains to the ounce, or in an effervescing salt, 8 grains to the ounce—1 dram being the dose. *Analgesic, antipyretic.*

FUCHSIN, $C_{20}H_{10}N_3.HCl$. Rosanilin hydrochlorate, or anilin red, occurs in brilliant elongated crystals having a green luster, readily soluble in water, and forming a bright-red solution. In toxic doses it produces salivation, vomiting, diarrhea, and yellow vision. It is excreted by the kidneys, liver, and salivary glands; imparts a yellow color to the urine and stools; is efficient in reducing albuminuria and in retarding the growth of carcinoma. Bogroff advocates its use in chronic tuberculous laryngitis and pharyngitis, employing for this purpose a spray of 2 per cent. boric acid solution saturated with fuchsin. The spray forms an impermeable layer over the epithelial lining, and shields the tissues from further irritation. *Dose*—from ½ to 4 grains, best administered in pill with a vegetable extract, such as gentian or licorice. *Antimycotic.*

GALLACETOPHENONE, $CH_3CO.C_6H_2(OH)_3$. Prepared by treating pyrogallic acid with acetic acid in the presence of zinc chloride. It is a light yellowish powder, which readily crystallizes in yellowish needles, soluble in hot water, alcohol, ether, and glycerin, and absolutely innocuous. It is a most efficacious antimycotic, and of pronounced value in psoriasis and similar skin affections. It is used as a 10 per cent. ointment, applied twice daily, and acts more promptly than chrysarobin, and without discoloration of skin or linen. *Antimycotic* and *in dermatology.*

GUAIACOL, $C_6H_4OH.OCH_3$. The methyl ether of pyrocatechin, obtained by the destructive distillation of guaiacum resin or beech tar. It is a colorless liquid, with a taste and odor similar to, but more agreeable than, those of creasote; it is soluble in alcohol, ether, and oils, but only slightly so in water; it boils at 392° F.; it has a specific gravity of 1.1171. It should be kept in dark bottles, protected from the light. Guaiacol has been much used as a substitute for creasote in pulmonary tuberculosis, administered with cod-liver oil, which disguises its taste. It has been recommended for tuberculous diarrhea in the form of the following enema: Guaiacol, 10 drops; olive oil, 6 drams; water, 8 ounces; yolk of one egg. Schueller frequently administers it by inhalation, employing for this purpose weak aqueous solutions (5 : 3000 to 5000). These inhalations must be constantly controlled by the physician, and over-exertion in inhaling must be strictly avoided. General improvement follows. It has also been successfully employed in so-called surgical tuberculosis in the form of an aqueous solution, in combination with a 10 per cent. iodoform-glycerin solution, injected at the seat of the disease. Lupus and tuberculous joint-disease have been so treated with marked success. As an antipyretic a solution containing from 5 to 7 per cent. of guaiacol in almond oil may be injected hypodermatically in doses of from 15 to 20 minims per diem. *Dose*—from ½ to 2 minims in pill or capsule. *Antituberculotic, antipyretic.*

HYDRACETIN, $C_6H_5N_2H_2(C_2H_3O_2)$. Acetyl-phenylhydrazin is a white, odorless, almost tasteless, crystalline powder, derived from coal tar; it is soluble in 50 parts of water, and freely so in alcohol, chloroform, and benzine; it fuses at 262.4° F. It is a powerful antipyretic, and must be administered with caution, and not continuously, as it very readily produces toxic effects—cyanosis of the face, chills, profuse sweats, arrest of pulse and respiration, and collapse. Conti considers it a powerful blood-poison with a destructive action upon the red blood-corpuscles, analogous to that of potassium chloride. A 10 per cent. ointment has been used with success in psoriasis, but the effect must be watched. *Dose*—from ½ to 2 grains daily, in one or two doses. *Antipyretic, analgesic.*

IODO-NAPHTHOL-BETA. Naphthol-beta diiodide is prepared by the action of iodine on naphthol-beta, and occurs as an inodorous, tasteless, greenish-yellow powder, insoluble in water, slightly soluble in ether, alcohol, and acetic acid, but freely soluble in chloroform. It has been suggested as a substitute for iodoform in the dressing of wounds and ulcers. *Antiseptic.*

IODOPHENIN is formed by treating a cold, saturated solution of phenacetin, acidulated with HCl, with iodine. It occurs as a chocolate-brown powder, or in steel-blue crystals after recrystallizing from glacial acetic acid, possessing an acrid, burning taste, and a feeble odor of iodine; it is insoluble in water, slightly soluble in benzol and chloroform, more so in hot glacial acetic acid, and freely soluble in alcohol; it melts at 266° F., decomposing at the same time. Wittkowsky has found that iodophenin is a most efficient bactericide, but Siebel concludes that no specific action can be ascribed to it that iodine itself does not exert. The objection to its use is its strong evolution of iodine. Introduced subcutaneously, it causes inflammation; taken internally, it affects the digestive tract, and iodine intoxication is possible even after small doses. *Antiseptic.*

Iodopyrin, $C_{11}H_{11}INO_2$, is a chemical compound of iodine and antipyrin, in which one atom of hydrogen is replaced by one of iodine. It is a tasteless and odorless powder, slightly soluble in cold water and alcohol, but readily soluble in hot. Munzer has used it in typhoid fever and pulmonary tuberculosis. "Five cases of typhoid fever are recorded, and in each instance the temperature was rapidly lowered to normal. In cases of pulmonary tuberculosis the administration of the drug caused profuse sweating, and in every way the antipyretic action was all that could be desired." When taken into the stomach, iodopyrin is decomposed into iodine and antipyrin. *Dose*—from 1 to 5 grains. *Antipyretic.*

Lysol is a saponified phenol derived from cresols by the action of nascent soap. It occurs as a dark-brown, syrupy liquid with a faint aromatic odor; it is freely miscible with water and alcohol, forming a clear solution which lathers when agitated; its specific gravity is 1.042. It is possessed of powerful deodorizing properties, and has been introduced as a soluble antipyretic and disinfectant. All agree that it is superior to the disinfectants commonly in use, possessing, as it does, higher antimycotic powers than carbolic acid or creolin, while it is less variable in constitution than the latter, and less poisonous than either. It produces marked improvement in lupus when applied freely by means of a cotton probe, after removal of the crusts, and allowed to dry, the application being repeated daily, or every second day. The pain of the application is acute for one-half hour, but entirely disappears in two or three hours. Dr. Unna has used lysol in the form of a plaster mull, and appears to have been favorably impressed with it; in this form it is nearly painless. Intra-uterine and vaginal injections have been repeatedly made without any toxic effects. Michelsen has used a ½ per cent. solution in twelve cases of celiotomy with the happiest results, healing by first intention following. It has also been used in the same strength in abortion. Szuman advises a ½ per cent. solution for irrigation of the pleural and peritoneal cavities. In the bladder it gives rise to vesical pain and tenesmus. Höffler recommends a 2 per cent. solution in diphtheria, and Gerlich employs it in the following prescription as a gargle for foul breath or diseased conditions of the mouth and throat: Lysol, 2.5 grams; water, 50 grams; alcohol and glycerin, each 25 grams. It acts as an efficient general disinfectant for the walls of a room by spraying with from a 1 to 3 per cent. solution, while for the hands, sutures, instruments, irrigation, and field of operation from 1 to 2 per cent. solution suffices. *Antimycotic.*

(*To be continued.*)

HOSPITAL NOTES.

CASES FROM THE CLINIC OF PROFESSOR J. M. DA COSTA,

At the Jefferson Medical College Hospital.

[Reported by Augustus A. Eshner, M.D., Clinical Recorder.]

TWO CASES OF GASTRO INTESTINAL NEUROSIS, WITH PECULIARLY INDUCED BOWEL-MOVEMENTS.

H. S., a salesman, thirty years old, for as long as he could remember had had from two to thirty stools daily. The stools were usually small, thin, and slimy, and occasionally blood-streaked; less commonly they were normal. The ingestion of liquids was invariably followed in from twenty to thirty minutes by a watery intestinal evacuation. Solid food occasioned no excess of movements. There was occasionally a desire to have the bowels moved, with ineffectual efforts at stool. The appetite was good. Digestion was attended with no discomfort. The patient alternately lost and regained weight. The urine had a specific gravity of 1036; it contained a precipitate of urates, but neither albumin nor sugar.

There was a history of prolapse of the bowel from birth or infancy, but this had corrected itself without therapeutic intervention, and for four years had occasioned little or no inconvenience.

The patient was given a pill containing an eighth of a grain each of silver nitrate and belladonna extract, to be taken after each meal, and he was told to restrict the use of liquids as much as possible. He returned in the course of a short time, reporting himself, even when on mixed diet, as cured; but he failed to present himself again, and the ultimate result is not known.

A. L. H., a girl, aged twenty-four years, who lived at home, complained for four years of severe colicky pain in the abdomen of progressively increasing intensity, invariably following the ingestion of food — less after liquids than after solids, and often occurring after the mere smelling of food. After taking food the abdomen became distended, and in the course of five minutes there was an urgent desire to go to stool. The stools were usually liquid, but were never observed to contain blood. The movements of the bowels were attended with pain and bearing down. The frequency of movement was not perceptibly influenced by restriction to a liquid diet. The bowels were never moved unless food or drink was previously taken. The appetite was preserved. Occasionally a greenish, bitter fluid was vomited in considerable quantity; blood was never vomited. There were flatulent eructations, but little loss of flesh and of strength was noticed. Menstruation was painful and was attended with headache.

The urine was of acid reaction; it had a specific gravity of 1034, and contained neither albumin nor sugar.

The patient was placed upon a pill of silver oxide, gr. ⅓, and opium extract, gr. ⅙. The ultimate result of this case could not be ascertained.

PHANTOM-TUMOR AND VALVULAR HEART-DISEASE.

A. R., a girl, aged fifteen years, had for four years observed an enlargement in the epigastric region, which progressively increased in size. The tumefaction was inconstant in size but was never wholly absent, and was generally as large as a child's head and attended with pain. Menstruation had previously been profuse, but was now absent. The appetite was impaired, but there was neither nausea nor vomiting. Obstinate constipation existed, and there had been slight loss of flesh. No hysterical symptoms had been manifested.

On examination, a tumor was found in the epigastrium, prominent, tender to the touch, and dull on percussion. The mass was influenced by the position of the patient and could be made to disappear by strong

flexion of the thighs on the abdomen. When the thighs were flexed the dulness on percussion gave way to a tympanitic note. The mass also disappeared when respiration was checked at the end of expiration; the sensitiveness, however, persisted. The heart was enlarged and overacting. A harsh, blowing, systolic murmur was heard in the mitral area. The urine was acid in reaction; it had a specific gravity varying from 1018 to 1022, and contained neither albumin nor sugar.

The valvular disease of the heart rendered it risky to administer ether with a view to ascertain the exact nature of the tumor. The results obtained by the forced flexion of the thighs on the abdomen, relaxing the upper portion of the recti and causing the tumor to disappear, were, therefore, especially valuable.

The following prescription was given:

℞.—Aloin . . . . . gr. ij.
Pulv. capsici . . . . gr. ij.
Ext. belladonnæ . . . . gr. j.—M.
Ft. pil. no. xvi.
S.—One to be taken three times a day.

One drop of tincture of aconite three times a day was also prescribed.

The improvement was most decided. The abnormal abdominal manifestations ultimately entirely ceased.

TWO CASES OF ARTERIAL THROBBING SIMULATING ANEURISM.

A. M. K., a housekeeper, aged fifty years, had been told that she had an aneurism. For more than four years she had observed palpitation of the heart and shortness of breath on exertion. Eighteen months before coming to the clinic she had noticed throbbing in the supra-sternal notch, which, under treatment, had become less decided. For sixteen months there had been irritative, "rasping" cough, which had also become less frequent and less distressing. The patient perceived a sound like the ticking of a watch, referred to the right sterno-clavicular articulation. There was no difficulty or pain in swallowing. Laryngoscopic examination detected no abnormality. The appetite was impaired and the digestion deranged. The face flushed on excitement—on both sides equally. There was subjective impairment of vision on the right side, with doubtful contraction of the visual field. The right pupil acted in convergence, but failed to respond to light. No lesion of either fundus was found. The patient stated that fifteen years previously the right eye was "paralyzed." No history of syphilis was elicited.

At the root of the neck there was evident throbbing. There was no pulsation in the chest. At the aortic cartilage a systolic murmur was heard, followed by a distinct second sound. The impulse of the heart was extended. The first sound at the apex was heavy. The pulses were equal. The urine was acid in reaction; it had a specific gravity of 1022 and contained neither albumin nor sugar.

Two drops of tincture of aconite three times daily were prescribed. The patient returned but once, reporting that the sense of beating had become much less decided.

J. M., a salesman, aged twenty-four years, for a year had felt a sensation, vaguely described as "jumping," a little to the left of the median line between the level of the umbilicus and that of the ensiform cartilage. It was least noticeable in the recumbent posture, most so when erect, and was intensified by active exercise. There were also palpitation of the heart, ringing in the ears, disturbance of sleep. The appetite was variable, and languor and drowsiness followed meals. The bowels were irregular. The man was concerned about himself and had lost twelve pounds in weight. He had never received a blow in the abdomen, but for a period of thirteen years he had had frequent occasion to employ the abdominal walls in making pressure. He used tobacco to excess. There was no history of venereal infection.

On examination, a pulsating area, as large as a man's fist, was found between the umbilicus and the ensiform cartilage. On auscultation, a systolic murmer, intensified by pressure, was heard in the epigastrium. No murmur could be heard in the back; nor was there pain in the back. The temporal arteries were large. The heart was acting strongly. The pulse was full and tense. The urine had a specific gravity of 1030; it contained neither albumin nor sugar.

The patient was given the following prescription:

℞.—Tinct. capsici . . . . gtt. xxiv.
Tinct aconiti . . . . gtt. xlviij.
Tinct. cinchonæ co. . . ad f℥iij.—M.
S.—A teaspoonful to be taken three times a day.

The patient returned improved, but seen at a later date the symptoms had returned to their previous intensity.

In both of these cases the throbbing simulating aneurism was the result of the disease of the heart; in the first case hypertrophy with aortic narrowing, in the second case simple hypertrophy in a nervous man, in whom very likely, too, the local pressure on the abdomen aggravated the throbbing. In the diagnosis of the second case the absence of pain was very significant; in the first case, the absence of pressure-symptoms.

THREE CASES OF VISCERAL SYPHILIS: PULMONARY SYPHILIS; PULMONARY AND HEPATIC SYPHILIS; CEREBRAL SYPHILIS.

PULMONARY SYPHILIS.

H. L. S., a clerk, aged twenty-five years, presented a history of winter cough for many years. Three years before coming under observation he had been infected with syphilis. For three months he had had persistent cough, with mucous but never hemorrhagic expectoration. He had lost fifteen pounds in weight, and had been in bed with what was said to have been malarial fever. There were irregular and infrequent chills, and for a time there had been night-sweats. The sputum was examined, but tubercle-bacilli were not detected. Ophthalmoscopically, nothing abnormal was noticed in either fundus. Laryngoscopic examination disclosed no evidence of syphilitic or tuberculous disease.

There was a history of pulmonary tuberculosis in the father and paternal grandmother. Irregular and scattered areas of percussion-dulness were found upon both sides of the chest, with harsh inspiratory and prolonged expiratory murmur.

The patient was placed upon potassium iodide and mercuric chloride; he was for a time also given cod-liver oil with malt. Under this treatment he progressively improved.

The following is a record of his weight:

September	120	pounds.
December 12th	127¼	"
December 24th	128¼	"
January 1st	130	"
January 9th	131	"
January 15th	130¾	"
January 30th	130	"
February 20th	131½	"

PULMONARY AND HEPATIC SYPHILIS.

O. S., a waiter, aged thirty-five years, had for six years complained of palpitation of the heart, shortness of breath, and precordial pain. For five years and a half he had had pain and tenderness in the epigastrium and vomiting. Five years before coming under observation he lost consciousness, and, as he was told, lay in convulsions, the face, lips, and hands being blue. This attack was not followed by palsy. Six months later the feet, hands, and eyelids were swollen for two months and a half; the swelling occasionally recurred thereafter. A second attack of unconsciousness, with convulsions and cyanosis, occurred a year and a half after the first. For three years there was cough, with scanty expectoration; there had never been hemoptysis. The man had lost twelve pounds in weight. He gave a history of syphilitic infection fourteen years before appearing at the clinic, and had been told that five years previously he had had bilateral pleurisy with effusion.

On palpation, a smooth, resistant, non-fluctuating tumor of peculiar shape was found extending to the umbilicus on the right and an inch and a half below the umbilicus. The area of hepatic percussion-dulness extended just below the margin of the ribs laterally. The mass seemed to project below and to pass lower down. There was also considerable dulness on percussion and resistance in the epigastrium, with tenderness. The upper border of the liver was difficult to map out on account of the dulness on percussion over the lung. The lungs were dull on percussion in areas of irregular size and distribution. On respiratory percussion the pulmonary resonance was elicited. The area of hepatic percussion-dulness was thus found to begin at the fifth intercostal space. There was percussion-dulness at the apex of the right lung, as well as bronchial breathing. Râles were not heard. Vocal resonance and fremitus were increased. There was substernal tenderness. No eye-lesion existed. The urine was acid in reaction and contained neither albumin nor sugar. One-twenty-fourth of a grain of mercuric chloride and ten grains of potassium iodide were directed to be taken three times daily, but the patient failed to return, and the result of treatment is not known.

CEREBRAL SYPHILIS.

M. B., a messenger, thirty-seven years old, had for three months, principally after noon, suffered with a sense of heaviness in the head and a tendency to stagger. The gait was unaltered; the station was firm; there was no ataxia. The knee-jerks were preserved. There was no gross derangement of sensation and no history of crises. The special senses and mental functions were subjectively unimpaired. There was no headache and no vertigo. The appetite was preserved. Digestion was well performed; the bowels were regular. There was no derangement of micturition. Neither cough, expectoration, shortness of breath, loss of flesh, nor chills, fever, or sweats were noticed. The action of the heart was regular; the sounds clear. The urine contained neither albumin nor sugar. On ophthalmoscopic examination evidences of optic neuritis were found, without limitation of the visual field and without scotomata. Six years previously to coming under observation the patient had had a single venereal sore on the penis, followed by unilateral enlargement of the inguinal glands; other secondary symptoms were not recognized.

The patient improved greatly upon treatment by means of mercuric chloride, gr. $\frac{1}{10}$ (subsequently increased to gr. $\frac{1}{24}$) and potassium iodide, gr. x (subsequently increased to gr. xv), three times daily.

A CASE OF PULMONARY TUBERCULOSIS AND MALARIAL FEVER.

G. C., a salesman, forty years old, presented himself at the clinic with a distinct history of malarial fever seven months previously, and irregular chills, fever, and sweats since. The spleen and liver were enlarged. For five months there had been cough, with muco-purulent, occasionally blood-streaked, expectoration. The man had lost twenty-five pounds in weight and had night-sweats. There was impairment of the percussion-resonance at the apices of both lungs, less marked on the right. At the left apex expiration was prolonged; at the right, the respiratory murmur was harsh.

The urine was acid in reaction; it had a specific gravity of 1026, and contained neither albumin nor sugar.

The patient was ordered a pill containing quinine sulphate, gr. ij, and arsenious acid, gr. $\frac{1}{10}$; and cod-liver oil. He failed to return.

A CASE OF MEDIASTINAL TUMOR.

L. K., a carpenter, forty-six years old, for four months had observed pain at the upper portion of the sternum and in the upper precordial region. For three months there had been a noticeable swelling at the upper portion of the sternum with dyspnea; the latter was relieved by inclining the head forward and was aggravated by the recumbent posture, so that sleep was prevented. There was metallic cough, with scanty muco-purulent expectoration. Deglutition was interfered with and was attended by a sensation of lodgment of solid food at a point about an inch and a half below the upper border of the sternum. A month previously to the onset of the symptoms the patient had been crushed by a heavy weight which he was engaged in lifting. He suffered no immediate distress, nor was he incapacitated for work.

The chest was deformed, the sternum prominent, the lower part of the chest retracted. There was some heaving of the upper part of the chest, but no strong beat or altered sound or murmur existed, and marked pulsation of the vessels of the neck was visible. The cardiac impulse was diffused, but most decided in the seventh interspace, one inch without the nipple line. The pul-

monary percussion-resonance was impaired in the upper lobes, especially on the right side. At the upper part of the sternum was an area of dulness on percussion about two and a half by three and a half inches in extent. At the apex a low-pitched presystolic murmur was heard. The pulses were unequal; the right was the feebler. The urine was of acid reaction; it had a specific gravity of 1026, and contained neither albumin nor sugar.

Under treatment with solution of potassium arsenite the patient gained six pounds in weight. He was subsequently placed upon potassium iodide, but did not do well, and failed to return.

HYPERTROPHY OF THE HEART FROM THE EXCESSIVE USE OF TOBACCO.

W. N., a barber, nineteen years old, had been an excessive smoker of tobacco for eight years, smoking from eight to twelve cigars a day. Three years before appearing at clinic he was seized with a paroxysm of palpitation of the heart, and thereafter the paroxysm had been often repeated. There also had been frequent attacks of vertigo, at times so intense as to cause staggering when he walked along the street. Three months before the patient was seen, after engaging in active physical exercise, he was suddenly seized with hemoptysis, expelling three or four mouthfuls of pure blood. In the following month he had, within a short period, at different times, five further attacks of pulmonary hemorrhage. The last attack had occurred two weeks prior to the appearance of the patient at clinic. The appetite was preserved. Digestion was well performed. The bowels were constipated.

The area of cardiac percussion-dulness was increased, beginning at the right border of the sternum and at the upper border of the left third rib. There was slight relative impairment of the percussion-resonance at the left apex. The vesicular murmur was roughened at both apices, in greater degree on the right.

The urine was acid in reaction; it had a specific gravity of 1020, and contained neither albumin nor sugar.

The patient was put upon the following prescription:

℞.—Sodii bromidi . . . . ʒiv.
Tinct. aconiti . . . . ♏xlviij.
Syrup. zingiberis . . ad fʒiij.—M.
S.—fʒj three times a day, in water.

At the expiration of two months the symptoms had disappeared, the pulse was 84, and the patient considered himself cured, although the physical phenomena of enlargement of the heart persisted.

FOUR CASES OF EXOPHTHALMIC GOITER: ONE IN A MALE; TWO IN GIRLS IN WHOM MENSTRUATION WAS RETARDED AND OTHER NEUROTIC MANIFESTATIONS WERE PRESENT.

C. P., a waiter, thirty-two years old, had for six years suffered with dyspnea and palpitation of the heart, aggravated by exertion or excitement. Only for six months had he noticed protrusion of the eyeballs, which was progressively increasing. The neck was full and presented a distinct swelling at its lower part, which proved to be the enlarged thyroid gland. The carotids throbbed, but presented no murmur. Over the goiter an intermittent murmur was heard. The heart was enlarged and overacting. The first sound was rather dull, the second distinct. The pulse in recumbency was 128. There were headache, vertigo, and tremor of the extended extremities.

The patient gave a history of venereal infection. He was immoderate in the use of tobacco and of alcohol.

The urine was of acid reaction; it had a specific gravity of 1032, and contained neither albumin nor sugar.

Some improvement followed the administration of aconite tincture in doses of from two to five drops, but the patient was soon lost to observation.

M. H., a dressmaker, sixteen years old, had never menstruated, although retarded menstruation was not a family feature. Nine months previously to presenting herself at clinic she had had sore-throat, with enlarged glands. Four months later, she again had sore-throat, also with glandular enlargement. It is thought that the thyroid gland was then enlarged, and that the eyes began to protrude. There was no palpitation of the heart and no tremor of the extended upper extremities. There was shortness of breath, increased on exertion or on excitement. Headache occurred from six to ten times a month. There was no vertigo. The girl was readily frightened. Digestion was well performed. The action of the heart was strong and regular. The pulse was 128. Both lobes of the thyroid gland and the isthmus were enlarged, the left lobe in greatest degree. Over the goiter an almost continuous murmur was heard.

The patient suffered from nocturnal incontinence of urine. A brother, a maternal uncle, and a maternal male cousin, also had nocturnal incontinence of urine.

The mother of the patient presented enlargement of the thyroid gland, which appeared after the birth of her first child and increased with each subsequent birth. The maternal grandmother and great-grandmother, as well as a maternal aunt and grand-aunt, all at one time or another presented goiters. Three sisters of the patient, married and having borne children, present no goiter.

The parents of the patient have noticed changes in her behavior, such as playing with children and walking about the streets when she should have been otherwise engaged.

The urine was of acid reaction; it had a specific gravity of 1024, and contained neither albumin nor sugar.

Tincture of aconite, two drops, and subsequently tincture of strophanthus, from three to five drops, three times a day, were prescribed, with improvement in the subjective condition.

K. D., a cloth-sorter, fifteen years of age, had for more than a year noticed prominence of the eyes, together with "nervousness," restlessness, and irregular jerking movements. The symptoms were much intensified, soon after their appearance, by the death of a sister. For six or seven months it had been observed that the throat was enlarged. From time to time the enlargement underwent additional increase, which sudsided in from twenty-four to thirty-six hours. For a period of six months there had been pain alternating in situation between the precordium and the right mammary region. There had been moderate palpitation of the heart during four months. Saliva was secreted and discharged in excess. The girl complained of thirst and dryness of the throat, and took considerable quantities of

water. For three months there had been frequent epistaxis. Menstruation had not appeared. On several occasions the abdomen had been distended, with attacks of colicky pain. When the upper extremities were extended at right angles to the trunk, the hands were rather over-extended at the metacarpo-phalangeal joints and slightly flexed at the phalangeal joints. There was no tumor, but there were choreoid movements giving rise to a coarse incoördination. The action of the heart was regular; its sounds were distinct; the pulse was 140. The station was firm. The knee-jerks were feeble. The pupils were equal, regular, and responsive to light. There was no nystagmus. The upper lids followed the eyeballs when the patient looked downward. The mental functions and special senses were unimpaired. The appetite was preserved. Digestion was deranged. There was slight cough, with muco-purulent expectoration, but no abnormality was detected in the lungs. The patient was not long enough under treatment to observe any results.

J. C., a housekeeper, fifty-seven years of age, had for two years suffered with palpitation of the heart and a sense of pulsation in the epigastrium. She also complained of weakness and "nervousness." There was tremulousness of the upper extremities. The thenar eminence of the left hand was swollen, and there was also slight swelling on the dorsum of the left hand. The hand was held in partial flexion. The first phalangeal joint of the left ring-finger showed a contracture. There was slight over-extension of the terminal phalanges of both hands, most marked in the middle fingers. There was neither flushing nor sensation of abnormal heat. The thyroid gland was enlarged, in greater degree upon the right. The eyeballs protruded. The extremities were swollen. There was shortness of breath, occasional headache, considerable vertigo, and loss of flesh. The appetite was good; digestion was fairly well performed; the bowels were regular. Sleep was undisturbed. The menopause had taken place ten years previously. The urine was acid in reaction; it had a specific gravity of 1018, and contained neither albumin nor sugar. Tincture of strophanthus, in doses of from three to five drops, was at first administered, but afforded no relief to the distressing palpitation. Subsequently five minims of the tincture of digitalis, with two drams of the infusion of digitalis, in conjunction with one drop of a 1 per cent. solution of nitro-glycerin, were prescribed to be taken thrice daily, but the patient did not return.

THREE CASES OF DIABETES MELLITUS: ONE IN A BOY, NINE YEARS OF AGE; IN TWO OF WHICH AN ODOR OF CHLOROFORM WAS PRESENT; IN ONE OF WHICH THE KNEE-JERKS WERE ABSENT.

C. B. N., a school-boy, nine years of age, was brought to the clinic with a diagnosis of diabetes. Two months previously it was noticed that he was passing unusually large quantities of urine that had a sweetish odor and stiffened the linen on which it dried. There was some weakness of the sphincter vesicæ, with slight incontinence of urine. For five weeks the appetite had been inordinate and the thirst excessive. Though the patient ate and drank largely, he had, however, lost ten pounds in flesh. There were no boils. There had been no itching of the skin. The bowels were regular. The boy was irritable, became readily fatigued, but slept well; no unusual odor was detected. Nothing abnormal was found in heart or lungs. Ophthalmoscopic examination revealed no lesion. There was no family history of diabetes. The urine had a specific gravity of 1042, and contained sugar.

The diet was strictly regulated, and phenacetin (gr. ij) and quinine sulphate (gr. j) in pill, and tincture of the chloride of iron, ten drops, three times a day, were prescribed, but the case did not remain under observation long enough to show the results of treatment.

R. S., thirty-six years old, an oysterman, came to the clinic bringing a specimen of urine, with a diagnosis of diabetes. A little less than nine months previously he had rather suddenly noticed that he was passing excessive quantities of urine, and that he was losing flesh and strength. He had marked thirst, but by restraint he succeeded in restricting the quantity of fluid taken almost within normal limits. He thought that on about two days of seven he passed but little more than the ordinary quantity of urine. The appetite was excessive. Digestion was well performed. The bowels were regular. There was itching of the skin, but no history of boils. A faint odor of chloroform was detected about the patient, of which he was unconscious. Sleep was poor; the patient complained of "nervousness." Vision was subjectively fairly good; there were muscæ volitantes.

The patient denied venereal infection. Fifteen years ago he had an attack of typhoid fever, attended with convulsions. Twenty years ago he was struck in the occipital region by the handle of a revolving crank, losing consciousness for fifteen minutes, and being incapacitated for work for a week.

The urine had a specific gravity of 1036, and contained sugar; albumin was not present.

Fluid extract of jambul was prescribed, beginning with five drops, three times daily, to be progressively increased.

V. L., thirty-nine years of age, a driver of a beer-wagon, presented himself at clinic with a history of over-indulgence in malt liquors, having for a period of six years drunk from ten to fifteen glasses of beer daily. He denied any venereal history. Nine months previously he had had rheumatism for three months. Fifteen years previously he had been wounded by bullets in the left temporal region and on the left lateral aspect of the chest, the bullets, it was stated, being retained. For a year before applying at the clinic he had observed progressive loss of flesh and increasing weakness; he had lost thirty pounds in weight. For two months vision had been failing. The appetite was impaired. The tongue was moist, red, and fissured. For six months there had been persistent thirst. By the patient's statement he drank a pitcherful of water in an hour or two during the morning. During the day he drank considerable milk (several quarts, it was thought) and coffee (two cups); in the evening he took tea. The thirst was so intense that the patient was compelled to arise at night to quench it; otherwise the mouth and throat would become dry and parched. Digestion was well performed. The bowels were regular. There had been no boils and no itching of the skin. The patient slept well. Hearing was lost on the right, following ex-

posure to cold fifteen years previously. The gait was normal. The station was firm. There was no ataxia. The knee-jerks could not be elicited. The pupils were equal, regular, and responsive to light. On ophthalmoscopic examination the discs were found pale, but there was no coarse lesion. The fields of vision were limited in greater degree upon the right. There was central scotoma, especially for red. There was no lesion of the cerebral nerves. An odor of chloroform was perceptible about the patient. He had not observed an increase in the frequency of micturition or in the quantity of urine evacuated, although he arose twice at night to urinate. Measurement, however, disclosed the fact that he was passing from sixteen to nineteen pints of urine in twenty-four hours, the urine containing a large proportion of sugar. He was placed on the usual antidiabetic diet. Treatment with jambul and afterward with sodium salicylate was followed by some but not by permanent improvement.

ABDOMINAL NEURALGIA SIMULATING RENAL CALCULUS.

S. D., a stevedore, forty-one years of age, three weeks before presenting himself at clinic, and shortly after having been engaged in lifting a heavy weight, was suddenly seized with intense lancinating pain in the lumbar region of the spine. The pain radiated to the left and around the abdomen to the umbilicus. The paroxysm was followed by excruciating abdominal cramps. During the remainder of the day, and on the following day, a sense of soreness persisted. Two days later the man suffered a second paroxysm, the pain, however, being umbilical from the outset, radiating to the anterior superior iliac spine and the inguinal region. The attack lasted four hours. Ether and morphine were administered for the relief of the pain. After an interval of four days, a third attack occurred, lasting also for four hours. The pain was referred to the crest of the ilium, and radiated to the anterior superior spine and the inguinal region. There was a fourth attack, lasting twelve hours, the pain occupying the same situation as in the preceding attack. The urine, it was stated, had an offensive odor, but had never contained blood. It had a specific gravity of 1022, and was of acid reaction; it contained neither albumin nor sugar. The patient did not pass gravel. There had never been jaundice. The stools had not been observed. There was general abdominal tenderness.

Belladonna tincture was prescribed for the patient.

PROGRESSIVE MUSCULAR ATROPHY AT AN EARLY STAGE.

F. P., a clerk, thirty-four years of age, five years previously to presenting himself at clinic had observed slight loss of power in using the right hand in writing. The symptom disappeared in the course of two weeks. Two years later the manifestation was repeated. Thereafter there was gradual loss of power in the right arm. For two years there had also been gradual loss of power in the left upper extremity. The chest and the upper extremities were conspicuously wasted. There was no pain, nor was there loss of power in the lower extremities. The patient had lost twenty pounds in weight. There was no cough; no shortness of breath; no palpitation of the heart. Micturition had become increased in frequency; the urine was acid in reaction, had a specific gravity of 1024, and contained neither albumin nor sugar. The heart-sounds and the breath-sounds were normal. There was no increase in the areas of splenic and hepatic percussion-dulness. There was no blue line on the gums. The hands were cyanotic, the right especially. There was wrist-drop on the right side. The station was firm. The knee-jerks were exaggerated. At times tremor became apparent in the extended right upper extremity.

Mild faradic applications to the wasted muscles were advised. The patient, however, failed to appear a second time, so that the electric reactions could not be taken and the results of treatment be learned.

CHOREA, RHEUMATIC PAINS, AND VALVULAR HEART-DISEASE.

F. L., a school girl, seven years old, presented herself at clinic in the fourth week of an attack of chorea that had developed three weeks after the patient had been abed with what was described as "rheumatic" pain in the extremities and trunk. The movements were for a time so violent that speech was interfered with. The station was firm. There was no ataxia. The knee-jerks were preserved. The pupils reacted to light. There was nocturnal enuresis. The urine was acid in reaction, had a specific gravity of 1008, and contained neither albumin nor sugar.

In the precordia a loud, blowing, systolic murmur was heard, propagated to the axilla and to the angle of the left scapula.

A younger sister of the patient had had an attack of chorea a few months previously, following a fright. A maternal aunt had also had chorea, following a fright.

The following prescription was given, with excellent results, the chorea gradually disappearing:

℞.—Tinct. belladonnæ . . . fʒj.
Liq. potassii arsenitis . . . fʒij.
Syr. hypophosphit. comp. . ad fʒiij.—M.
S.—A teaspoonful to be taken three times a day.

CLINICAL MEMORANDA.

THREE CASES OF NEUROTIC EDEMA FOLLOWING TRAUMATISM.

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THE only papers referring to the subject of neurotic edema that I have been enabled to find are, one read before the Philadelphia Neurological Society by Dr. William Osler, and a report of several cases detailed by Dr. Allen J. Smith, in THE MEDICAL NEWS for March, 1889, under the title of "Angeo-neurotic Edema." The cases reported by these gentlemen were not due to traumatism, and it is, therefore, presumed that those herein referred to may not prove uninteresting.

During the latter part of June of last year a man in the prime of life presented himself at the out-patient surgical department of the Jefferson Medical College

Hospital, giving the following history: Five years previously he had contracted a chancre, which was followed by secondary syphilis, for which he was under treatment for several months. He was apparently perfectly cured, and had no further trouble until the latter part of the preceding January, when a small hard nodule made its appearance under the skin of the penis just back of the right side of the glans. The nodule was somewhat larger than a pea and firmly attached to the deeper structures. There was no pain, and the man paid no attention to the circumstance for four or five weeks, at the end of which time the swelling began to increase. It became indurated, hot, red, and painful. In this condition he applied to a physician, who punctured the part with a needle, and informed him that he was suffering from an abscess, and that he should be operated upon as soon as possible. Not being satisfied with this diagnosis, he applied to a notorious quack, who told him that he was afflicted with cancer, and undertook to cure him by means of a plaster applied to the part. Under this treatment ulceration rapidly supervened, accompanied by swelling, and, as the patient expressed it, the penis began rapidly to "melt away." When he came under my observation I found the organ to be in a state of subacute inflammation, with enlargement and thickening. On the right side there was a large indurated ulcer, with ragged undermined edges; the base was covered with a dirty-white pultaceous slough; the right half of the glans penis was entirely destroyed, and the urethra opened behind the head of the penis. The glands in the groin were not involved. The general condition was fair; the patient was somewhat anemic. The diagnosis of gumma was made, and the patient was placed upon the usual specific treatment, with appropriate attention to the local condition; the ulcer cicatrized. The patient was discharged, in course of some six weeks, cured. During the latter part of last August he again presented himself at the hospital and complained of an inability to pass water. On examination, it was found that the scar resulting from the ulceration had contracted, the urethra closing, so that it was with difficulty located; when found the passage was too much diminished to permit the passage of even a small silver probe. The bladder was very much distended with urine. The urethra was freely opened by means of a curved tenotome, and a No. 26 F. meatus bougie was inserted as far as the peno-scrotal junction. The man was directed to go to the closet and pass his water. In a few moments he returned very much alarmed. He stated that the urine started without any trouble, but his penis began immediately to swell, and the tumefaction soon increased to such a degree that complete phimosis supervened with stoppage of the flow of the urine. The penis was found to be enormously swollen; it was at least three times its natural size, the edema extending over the whole organ, involving the upper portion of the scrotum, and extending to the peno-scrotal junction, where the swelling took the form of a pouch. The skin was very tense and shiny; it did not pit on pressure, and it was absolutely painless.

At first I was puzzled to account for the condition of affairs. I argued that it could not be a rupture of the urethra, with extravasation of the urine, because of the short space of time it had taken for the whole penis and scrotum to become edematous. The patient was perfectly free from pain, which indeed was the most noticeable point. There had been no manipulation of the urethra of any moment, and the canal was unobstructed from the bladder to the orifice of the urethra at the time the swelling took place. I knew that if a rupture of the canal had taken place the percolation would at the outset have been localized. The man had had a long-standing inflammatory lesion of the penis, with syphilitic history; hence I thought there might be a diseased condition of the veins, and that probably the slight manipulation necessary to perform the needed operation might have resulted in a clot in the damaged vessels. Keeping in mind the great rapidity with which swelling had supervened; that there was no pain; no tenderness over the course of the veins, and that there was an absence of engorgement of the superficial veins, I came to the conclusion that the case was one of edema, due to nervous influence.

The skin was slightly punctured with a needle, and the resulting drop of fluid that exuded was found to be perfectly clear. The patient was put to bed and ordered an eighth of a grain of pilocarpine, together with a saline purgative; direction was given to elevate the penis against the abdomen, and an application of lead-water and laudanum was ordered. The next morning the swelling had completely disappeared, and the patient was discharged.

This case is particularly interesting from the fact that it might be repeated in practice at any time, and if not understood might prove a cause of great anxiety to the physician, and be a subject of alarm to the patient. The swelling could not have been due to inflammation, as at the time of the operation the onset of the effusion was almost instantaneous. It could not have been due to embolism, or the patient would not have been convalescent by the following day. There is only left, therefore, the theory of disturbance of the vasomotor system of nerves to account for the phenomena.

The second case is that of an old gentleman whom I found suffering from a small furuncle, about the size of the little-finger-nail, situated on the top of the scalp. I incised it and pressed out a drop of pus, and dressed the wound with a little vaseline. In a very short space of time I received an urgent message to come to the hotel as soon as possible to see my patient, as he was very ill. I found him sitting up in bed with the right side of his face and ear enormously swollen. The affected part did not pit on pressure, and was neither hot nor painful. The temperature was normal; the tongue clean. I ordered a poultice to be applied to the face, and directed a Seidlitz powder to be taken, and in the course of forty-eight hours the swelling had entirely disappeared.

The third case came under my observation at the Philadelphia Hospital. The patient was a man well advanced in years, who had been admitted to the surgical wards, and who was supposed to be suffering from surgical erysipelas. The man had been drinking for a day or two previously to his admission to the hospital. Whilst under the influence of liquor he had fallen in the street and received a very slight superficial wound of the occiput. On the following day, his face began to swell, and he was brought to the hospital. There was

extensive edema of the eyelid and upper lip, but no fever, no pain, and the bowels were regular; the effusion was firm and elastic; the tissues did not pit on pressure. A cathartic was ordered, to be followed by a dose of bromide of potassium at bedtime, and the wound, which was slight, was directed to be dressed antiseptically. By the next evening the effusion had been absorbed.

The diagnosis of neurotic edema is readily made if the practitioner bears in mind its sudden onset, the absence of pain, and that the effusion is unaccompanied by the usual symptoms of inflammation, together with non-pitting on pressure, which is probably due to the fact that the swelling is principally confined to the dermal structure, and not to the sero-cellular tissue, as is the case in edema from inflammatory causes.

In the case first reported the swelling took place long before inflammation could have set in; in the second case, there was a small spot of localized inflammation present, but the effusion did not occur until the slight incision had been made, and then it followed at once; and in the third case the wound was a mere scratch upon the occiput, yet it was followed by extensive swelling of the face.

These cases, together with the reports of Drs. Osler and Smith, would go to show that this form of edema is not so rare as it is generally supposed. I have been consulted by several patients, who have awakened after a night's sleep and found either one or both eyelids swollen without any apparent cause, there being neither heart-disease nor kidney-disease present. The swelling would usually disappear in the course of an hour or so, and the patient being placed on an iron and tonic treatment for a couple of weeks, no further trouble resulted.

The question naturally arises how far the swelling in those parts of the body that have loose connective tissue may be due to nerve disturbances. In operating by the open method on varicocele and hydrocele, in spite of using drainage, I have always found that there has resulted an immense amount of swelling, that is usually hard, elastic, giving rise to no pain, and not pitting on pressure, the patient's temperature being at the same time normal. In many cases the swelling has been so great that were it not for the fact that the subjective symptoms were natural, and that scarcely any discharge presented itself, a looker-on might easily be led to believe that the drainage-tube was blocked, or that it was inefficient. The swelling, however, readily subsides, leaving the inference that the edema is due to nervous disturbance.

No doubt the lymphatic system is somewhat involved in these edematous conditions, but as to this it is impossible to decide positively.

Neumann has demonstrated experimentally that the lymphatic vessels are narrowed by pressure, and that the lymphatic corpuscles are banked up in the canals, and that they thus aid in the general swelling. This would seem to be substantiated by the fact that an examination by the microscope shows the effused fluid to be composed of leukocytes and clear serum. That in some cases there is an angiomatous condition of the lymph-vessels of the corium, due to an altered nerve-supply, would seem highly probable. For this latter variety Dr. Smith suggests the name of acute neurotic lymphangioma.

A FATAL CASE OF LARYNGISMUS STRIDULUS IN AN INFANT SIX DAYS OLD.

BY W. SINCLAIR BOWEN, M.D.,
OF WASHINGTON, D. C.

ON Monday night, July 28, 1891, I was called to see Mrs. H., aged twenty, a primipara, and found her in the first stage of labor; vertex presentation; position, left mento-anterior variety. The first stage lasted twelve hours; the second, one hour; and the third, ten minutes. The infant, a female, breathed well as soon as born, was well formed, weighing fourteen pounds. Chloroform was used during the delivery of the head and shoulders; there was no laceration of the perineum or indeed any accident to mother or infant, the labor being normal in every respect. So soon as the mother was made comfortable, the infant was put to the breast; it seized the nipple, but obtained little else than colostrum, until the end of the second day, when the milk flowed freely, but was of an unusually yellow color for twenty-four hours. For five days all went well; the infant nursed, emptied its bowels and bladder regularly; at the end of this time the umbilical cord had dropped off. On the sixth day, at my usual morning visit, I noticed that the infant did not nurse regularly or with the same ease as it had; it would seize the nipple for only about a minute at a time, its breathing seeming to be interfered with. I instructed the nurse to hold its head in front of a large window, and with the aid of a small spoon as tongue depressor, I was able to secure a fairly good view of the pharynx, but could see nothing abnormal; nor was there anything to be found by external examination of throat and neck; no glandular enlargements whatever were present. A slight rhinitis was the sole abnormal condition to be detected. Up to this time there had been no marked paroxysm of dyspnea. I ordered a powder of gr. $\frac{1}{8}$ potassium chlorate, with gr. j white sugar, to be placed on the tongue every hour, and told the nurse to keep the patient and surroundings as quiet as possible. I then left and returned after an absence of one hour and a half. At my second visit I found that there had been one marked paroxysm, one-half hour previously, and a second occurred soon after I entered the room. From a condition of quiet and natural repose, with easy and regular respiration, there was noticed a catch in the breathing, followed by more spasmodic respiratory movements, the inspiratory act becoming more and more stertorous until finally suspended. There were general tonic convulsions involving nearly all of the muscles of the body and extremities, especially those of respiration, the thorax becoming hard and immovable; the forearms were strongly pronated, the wrists flexed, and the thumbs bent on the palms of the hand; the head was extended and the lower limbs rigid, giving the body the opisthotonus position. The face and neck became livid and covered with large drops of perspiration. During the attack, death seemed imminent, as neither pulse nor respiration could be detected. After a period of about a minute, but seemingly longer, the spasm relaxed, the pulse returned, also the respiratory movements; not, however, with the noise attending inspiration as at the commencement of the paroxysm; the face and neck resumed the natural color, and the little patient seemed as comfortable as ever before, but refused to

nurse. I diagnosticated the case as one of "laryngismus stridulus," and informed the parents of its serious nature. We at once put the infant in a warm bath (96° Fahr.), and I sent for Dr. Richardson, who shortly arrived, and confirmed the diagnosis, as well as the unfavorable prognosis. He advised the use of potassium bromide in gr. j doses, at intervals of half an hour, and this was administered regularly. The paroxysms continued to recur at shorter intervals and with increased severity, and at about twelve that night I began the administration of chloroform by inhalation and prevented any more paroxysms, beginning with the inhalation at the first evidence of an attack, and withholding the anesthetic so soon as relaxation began. During the entire day no nourishment had been taken, and I now began to pour down its throat a little of its mother's milk, freshly drawn, by means of a small spoon. During the four hours following I succeeded in getting it to swallow nearly a glassful of milk, but at the end of this time it died, apparently from exhaustion.

There are two points to be considered in this rather uncommon affection—the paroxysm itself and the underlying general condition giving rise to the spasm. As to the paroxysm itself, I can say that it was very severe, but I do not know what underlying general condition existed to give rise to the spasm.

The infant was large, well proportioned, and gave no evidence of rickets or any other constitutional dyscrasia. The parents are both well developed and healthy. Dr. Morris Lewis, in Keating's *Cyclopedia of Diseases of Children*, says: "When the paroxysm is very pronounced and accompained by carpo-pedal spasm or merges into general convulsions, the prognosis becomes very grave." Reid states that of 289 cases that he collected, 115 died; and Meigs and Pepper state that of 61 cases, 4 died of intercurrent or consecutive diseases, while of the remaining 57, 32 were cured, and 25 (or about 48 per cent.) died of the malady itself; adding these cases together makes a total of 350, with 140 deaths, a percentage of 40. A disease attended by so great a mortality demands the most careful study and investigation. Treatment in the case just cited proved futile, and a point of great interest I think is in regard to the early use of chloroform by inhalation to mitigate the severity of the paroxysms and prevent their recurrence, rather than admit delay by the use of less speedy and less efficient agents when the symptoms are severe almost from the very outset of the disease.

In other forms of convulsions chloroform is used with most happy results, and by the profession at large it is considered to be "the sheet-anchor" in puerperal convulsions. In infantile convulsions Henoch considers any other initiative treatment a waste of time.

In looking up the literature of the subject I have found no similar case fatal in an infant so young.

TWO CASES OF XERODERMA PIGMENTOSUM.

By GEORGE MURPHY, M.D.,
OF LEO, INDIANA.

Having observed in Taylor's *Atlas* that but forty-one cases of xeroderma pigmentosum had been reported up to the time of the publication of that work, it seemed to me that a report of two well-marked cases in one family would prove interesting. The parents of the patients were healthy; the father was a farmer. There was no family history of cutaneous affection; nor were the remaining five children affected.

The elder of the patients was a boy a little more than ten years old. At the age of three months it is said that he had a fever, lasting a week, and immediately followed by an eruption of minute vesicles; these were replaced by small areas of pigmentation. In the third year the skin was observed to be hypertrophied in patches, and, subsequently, small tumors, about the size of squirrel-shot, appeared. During the eighth year dark-bluish tumors developed, attaining diameters of from half an inch to an inch and a half; these were somewhat pendulous, resembling large warts; they disappeared by sloughing, or by violence while the child was playing. As the growths disappeared they were replaced by others; and these, in turn, disappeared, until finally there had been at least twelve. The general health of the patient was preserved. About two years ago a slight pannus of the right cornea was observed. At this time the lower lid of the right eye began to be eroded. About a year ago an opacity of the left cornea appeared. Pigmentation was but recently observed upon the arms and forearms. A tumor about three quarters of an inch in length appeared upon the posterior aspect of the integument of the right helix, separating spontaneously about a year ago. In this situation there is a depression of the integument, and the cartilage at its anterior aspect is somewhat thinned. A small scaly mass developed on the left helix. At present vision in the right eye is lost; the outer half of the cornea and adjacent sclerotic are thinned and staphylomatous, evidently as the result of a previous growth in this situation. The lower right eyelid has been completely destroyed by erosion; its margin is not indurated. There is slight pannus of the inner and upper three-fourths of the left cornea, as well as a small, white growth, about one-fourth of an inch long and about two lines in breadth, upon the external inferior quadrant of the left cornea. The left lower eyelid, with the exception of one-fourth of an inch at the outer extremity, is destroyed. There is suppurative conjunctivitis of both upper eyelids. There is a tumor, three-fourths of an inch in length, situated over the body of the right malar bone; it evidently does not extend beneath the integument. This tumor is somewhat pendulous, is black, and sloughing at the summit. Last week it was one and one-fourth inches in length, but has sloughed off so as to be one-half of an inch less in length at present; it has a circular base.

There is one tumor near the left extremity of the lower lip: about one-fourth of the base of the tumor involves the mucous membrane; the other three-fourths involves the integument of the lower lip. The tumor is one-half of an inch in diameter, circular, and the base slightly narrower than the summit. There is another, of a reddish color, about a sixth of an inch to the right of that last described; it is situated wholly upon the mucous membrane of the lower lip. The tumor on the cheek made its appearance six months ago; the larger one, upon the lower lip, three months ago, and the smaller one a week ago. The greater portion of the integument of the face is shining and atrophied. The portion of the skin of the face not atrophied presents numerous telan-

giectases; the forehead, a large number of the black pigmentoses; and the skin over the entire body is harsh, from apparently unhealthy epithelium. The integument of the superior and inferior extremities is covered by black pigmentoses. The neck and upper part of the chest presents an intermingling of black, brown, and red spots.

The second case is that of a girl, six years old, in whom the disease appeared at the age of three or four months. As in the first case, the onset was preceded by fever. Within two weeks pigmentoses appeared. Some of the patches are now brown, others black. They are present in great abundance on the face, forehead, and outer aspect of the forearms, as well as on the dorsal aspect of the hands. The general health of the child is good. There is slight conjunctivitis of the lower eyelids, as well as hyperemia of the ocular conjunctiva; but none of the small tumors usually described as belonging to the less advanced period of the disease.

A FETAL MONSTROSITY.

BY J. J. CANON, M.D.,
OF MOSCOW, TEXAS.

ON February 3d, I was called to see a primigravid negress, twenty-two years old, who was resting well, with pulse and temperature normal; the bowels were constipated. On inspection I found the abdomen large and tense, presenting a tumefaction with its long axis transverse. On palpation I was able to detect the head of a fetus on the left side. There were no signs of fetal

life. I gave the patient fluid extract of senna to move the bowels. On the following day the os uteri was well dilated, with the breech of the child presenting. A foot was brought down and the labor was completed without any trouble. In grasping the child in delivery the skin peeled off in several places. The mother believed that the child had been dead about forty-eight hours.

The fetus had only a rudimentary brain; one anterior nasal orifice; hare-lip; cleft palate; the superior maxillary bone being in two distinct pieces.

The feet and hands were extremely large, the fingers unusually long; the body was covered with a fine hair. The head was almost flat, the distance from the glabella anteriorly to a corresponding point posteriorly being but one and a quarter inches.

MEDICAL PROGRESS.

Para-peritoneal Nephrectomy for Tuberculosis of the Kidney.—RIVIÈRE (*Lyon Médical*, 1892, No. 9, p. 288) has reported the case of a woman, twenty-five years old, who for fifteen months had complained of pain in, and increased frequency of, micturition. In the course of a year, paroxysms of pain in the right loin, lasting for four or five hours, occurred. The urine, on standing, deposited a dense sediment containing pus and minute calculi. The pain subsequently became constant and associated with a sensation of burning. A tumor, painful on palpation, then became apparent in the right loin. Pollakiuria was decided. The temperature rose to 104° and was uninfluenced by antipyretics. The general condition failed. The tumor in the loin was separable from the liver. On palpation, it yielded a sense of elasticity, without fluctuation. On vaginal examination, the anterior wall of the bladder was found to be thickened, indurated and painful; in the right lateral cul-de-sac a painful longitudinal tumor could be felt in the course of the ureter. In the absence of evidence of tuberculous infection, a diagnosis of calculous pyelo-nephritis was made and nephrotomy determined upon. A vertical incision was made between the twelfth rib and the crest of the ilium, outside of the latissimus dorsi muscle. The peritoneum was pushed forward. The kidney when exposed presented many tubercles and granulations. It was decided to remove the organ, and its pedicle was ligated *en masse*, and severed without difficulty and without hemorrhage. The kidney was caseous and excavated, but contained no calculi.

The Action of Soluble Ferments upon the Diphtheritic Poison.—To determine the nature of the diphtheritic poison, GAMALEIA (*Compt. rend. hebdom. des Séances de la Soc. de Biol.*, 1892, No. 7, p. 153) exposed the filtered products of cultures of bacilli of diphtheria to the action of various ferments, and found that of maltin, invertin, emulsin, pepsin, and trypsin only the last two modified the toxicity of the cultures. Pepsin was active only in an acid medium. Doses of the filtered products, otherwise immediately fatal, could, after peptonization, be injected into guinea-pigs without at once causing death. A cachexia, however, was induced that ultimately proved fatal. The explanation is that the diphtheritic poison is an albuminoid substance from which pepsin separates a nucleo-albumin, likewise possessing toxic properties and provocative of a cachectic condition.

It is assumed that the diphtheritic poison does not cause toxic symptoms when introduced into the intestinal canal because the nucleo-albumins are decomposed and the nucleins are not absorbed. It is also believed that the destruction of the diphtheritic poison in the

bodies of refractory animals is not analogous to proteolytic digestion, for this does not destroy the toxicity of the nucleins, the presence of which would give rise to fatal cachexia.

The Blood in Acute Rheumatism.—At a meeting of the Royal Medical and Chirurgical Society of London, Garrod (*British Medical Journal*, No. 1624, p. 335) reported the results of a study of the blood in acute rheumatism, based upon some eighty examinations. It was found that an attack of rheumatism was always attended with a considerable diminution in the number of red corpuscles, the diminution setting in early. When convalescence took place the number was restored to the normal. There appeared to be no connection between the variation in the number of red corpuscles and the temperature-curve. The variation constituted a more delicate index of the activity of the rheumatic process than did the temperature-chart. The changes in the percentage of hemoglobin corresponded pretty closely to those in the number of corpuscles. Exceptionally the relative percentage of hemoglobin was lower than the absolute percentage. No relation was found to exist between the condition of the blood and the presence of urohematoporphyrin in the urine. The anemia of rheumatism thus appears in two forms: an acute oligocythemia, which is rapidly recovered from and requires no special treatment, and a more chronic condition of pseudo-chlorosis, which may outlast the attack, and in combatting which iron is therapeutically of great value.

The Part Played by the Spleen in Artificial Immunity to Tetanus.—Tizzoni and Cattani (*Centralbl. f. Bakteriol. u. Parasitenk.*, 1892, No. 11, p. 325) have sought to determine whether the immunity-conferring substance found in the serum of animals inoculated with the products of bacterial activity is introduced from without, or is developed within the organism of the animal, from the irritation of the toxic products; and in case of the latter, whether the property is possessed by all of the elements of the body, or by only certain of them. They inoculated with culture-products of bacilli of tetanus a number of rabbits, at intervals of from fifteen to forty-five days after successful removal of the spleen, as well as a number of control-animals. Under otherwise like conditions, while all of the second group of animals survived, those of the first died within the same time and amid the manifestations presented by animals that were not protected.

Toxicity of the Blood in Mammifera after Removal of the Supra-renal Capsules.—Abelous and Langlois (*Compt. rend. hebdom. des Séances de la Soc. de Biol.*, 1892, No. 7, p. 165) have found that in frogs removal of both supra-renal capsules is followed by paralysis and death. Injection of the blood of the dying animals into other frogs is likewise followed by progressive paralysis. In both cases the irritability of the nerves is soon lost, while that of the muscles remain. In guinea-pigs, removal of one supra-renal capsule is not followed by death, while removal of both is followed by death, preceded by paralysis beginning in posterior extremities. Sensibility is apparently preserved. That the paralysis is dependent upon an influence upon the peripheral filaments of the motor nerves is demonstrated by the fact that the paralysis did not take place in a part of which the circulation was controlled by ligature while the nerve-supply was left undisturbed.

A Case of Combined Paralysis Agitans and Posterior Spinal Sclerosis.—At a meeting of the Berlin Society for Psychiatry and Nervous Diseases, Placzer (*Centralbl. für Nervenheilk. u. Psychiatrie*, February, 1892, p. 5) presented a man, fifty-two years old, who had a history of syphilis of thirty years' standing. At forty-two he had lightning-pains and looseness of the teeth; and potence diminished. Soon, the tremor of paralysis agitans appeared and the face became immobile and expressionless. The pupils were small and irresponsive to light; the knee-jerks were abolished; station was unsteady; the functions of the bladder were deranged. There was some diminution of the pain-sense in the right lower extremity. Memory was enfeebled.

Cholecystocolotomy.—Chavasse (*Lancet*, No. 3576, p. 568) has reported the case of a man, forty-eight years old, in whom cholecystotomy for the relief of jaundice, dependent upon biliary obstruction by calculi, was followed by the persistence of a biliary fistula. Other measures failing, with the aid of bone-plates, a communication was established between the gall-bladder and the colon at its hepatic flexure. At first bile and fecal matter were discharged through the abdominal wound, but ultimately this closed, the stools were passed naturally, and the general condition of the patient was much improved.

Radical Treatment of Hernia.—In a paper read before the Philadelphia County Medical Society, Shimwell expressed the view that in a number of cases the occurrence of hernia is primarily dependent upon excessive length of the mesentery. In these cases he proposes to accomplish a radical cure by shortening the mesentery. He believes that the operation is unattended with grave danger. He would effect the shortening by folding the mesentery on itself, holding it thus by interrupted sutures.

The Differentiation of Pseudo-leukemia and Glandular Tuberculosis.—Weishaupt records an interesting observation in which tuberculosis of the lymphatic glands simulated pseudo-leukemia. A man, twenty-one years old, who applied for treatment in an attack of influenza, had for thirteen years presented glandular enlargement. One of the glands had softened, and a fistula had formed. The urine was albuminous; the spleen and liver were enlarged. Symptoms of bronchitis were present, and there was febrile movement. Tubercle-bacilli were sought for, but not detected. Death took place, and lymphomata were found in the neck and abdomen; small lymphoid nodules in the lungs, kidneys, and liver. The evidences of bronchitis and catarrhal pneumonia were present, as well as ulceration of the bowel. Based upon the macroscopic examination, a diagnosis of pseudo-leukemia was made. Microscopically, however, it was demonstrated that the lymph-glands were in a condition of hyaline necrosis, and contained tubercle-bacilli. Tubercle-bacilli were also found in the margins of the intestinal ulcers, but not in the lungs, kidneys, or liver.—*Centralbl. f. klin. Medicin*, 1892, No. 10, p. 193.

THERAPEUTIC NOTES.

Tumenol in Dermatologic Practice.—Tumenol is the name given to a preparation recommended by NEISSER (*Deutsche medicin. Wochenschr.*, 1891, No. 45) as an efficacious remedy for some forms of eczema and for the relief of itching. Like ichthyol, tumenol is prepared from the bituminous layers of earth. While the basis of ichthyol is a substance containing a large proportion of sulphur, that of tumenol consists of unsaturated carbohydrates having a strong affinity for oxygen and acting as reducing agents. Tumenol is obtained from these carbohydrates by the action of concentrated, fuming sulphuric acid. Tumenol is not an elementary body, but a mixture of tumenol-sulphone, or tumenol oil, and tumenol-sulphonic acid, or tumenol powder. Tumenol is with difficulty soluble in water, but makes a clear solution with a mixture of alcohol, ether, water, and glycerin. Tumenol has been employed as an ointment (from 5 to 10 per cent.); tumenol oil has been used pure or as an ointment; tumenol-sulphonic acid has been used as a powder or in a 5 per cent. solution in water. Tumenol is of black color; it leaves no permanent stains upon linen; it has a faint, inoffensive odor; it has no antiparasitic activity; it is non-toxic to animals; it is but slightly irritant. The therapeutic applications of tumenol are: 1, as a drying, antiphlogistic agent, facilitating cicatrization, especially in moist eczemas, erosions, excoriations, superficial ulceration; 2, to relieve itching, not only in parasitic dermatitides and in eczema, but also in forms of prurigo and pruritus.—*Berliner klin. Wochenschr.*, 1891, No. 10, p. 235.

Thymacetin.—At a meeting of the Berlin Society for Psychiatry and Nervous Diseases, JOLLY (*Centralbl. für Nervenheilk. u. Psychiatrie*, February, 1892, p. 50) reported results obtained from the employment of thymacetin (a white, crystalline powder, insoluble in water) in doses of from four to fifteen grains, in thirty cases of headache of varied kind. True hemicrania was scarcely influenced; considerable relief was afforded in one case, but unpleasant secondary manifestations occurred. In a number of cases of habitual diffuse headache or transitory headache, the pain was usually mitigated. In cases of headache of organic cerebral origin the remedy was without effect. It proved serviceable in cases of neuralgic headache. The result was variable and uncertain in cases of morphinism. Thymacetin acted much like phenacetin. It may cause a sense of fulness and throbbing in the head; the pulse may be retarded; drowsiness may be induced. In sixteen of twenty-six cases a dose of seven and a half grains acted as a hypnotic.

Toxic Symptoms from Sulphonal.—KOBER (*Centralbl. für klin. Medicin*, 1892, No. 10, p. 185) reports the case of a woman, fifty-two years old, with a tendency to melancholia, who suffered from marked insomnia, for which sulphonal was prescribed in doses of from seven to twenty-two grains daily. Some amelioration of the symptoms followed, but nausea, vomiting, abdominal pain, constipation, increased thirst, and apathy developed; while the urine, which assumed a Burgundy-red color, was eliminated at infrequent intervals in diminished quantity. The urine at first contained no albumin and no formed elements, and at no time sugar, but subsequently albumin and casts of various kinds appeared. Investigation disclosed the fact that the discoloration was due to the presence of hemoglobin. Red corpuscles were not found, nor could sulphonal be detected in the urine. Despite the withdrawal of the drug, the symptoms persisted and the patient died of heart-failure.

Morphine in Heart disease.—HERVOUET (*Revue gén. de Clin. et de Thérap.*, 1892, No. 4) maintains that passive hyperemia is not a contra-indication for the employment of morphine or opium in cases of disease of the heart. With the venous congestion is usually associated arterial anemia. By removing dyspnea and nervous manifestations morphine may succeed when other remedies have failed. In some instances, morphine acts not only as a calmative, but also as a stimulant, increasing the powers of the patient and fortifying the action of other medicaments. The presence of albumin in the urine is not a contra-indication for the employment of morphine when the albuminuria is dependent upon the disease of the heart. It has been demonstrated that morphine may also with advantage be injected subcutaneously in the uremia of chronic nephritis.—*Centralbl. f. die ges. Therapie*, 1892, x, 3.

The Treatment of Posterior Spinal Sclerosis by Extension.—BENEDIKT (*Wiener medizin. Presse*, 1892, No. 1, p. 4) reports the employment of extension of the vertebral column in a considerable number of cases of posterior spinal sclerosis, with most happy improvement in gait and station, and with mitigation of the neuralgic pains. He employed a modification of a method originally described by Bonuzzi, in which no apparatus is required. The patient is made to lie supinely on a table, bed, or sofa, with the head and upper portion of the spinal column partially elevated, while the lower extremities are grasped at the ankles and carried upward over the body and brought down over the shoulders. In this way it has been demonstrated, a considerable degree of extension of the spinal column is obtained. The method possesses manifest advantages over suspension.

Antiseptic Diuresis.—The following formula is recommended in infectious nephritis for its diuretic and antiseptic effects:

℞.—Sodii benzoatis . . . ʒiv.
Aceti scillæ } . āā f ʒjss—M.
Syrup. aurantii cort. }

S.—A teaspoonful every hour or two, according to age.—*Rev. de Thérap. Méd.-chir.*, Nov. 5, 1892.

For Cardialgia.—In some cases of cardialgia in hysterical and neurasthenic subjects, good results have been obtained by the employment of tincture of piscidia erythrina, in doses of twenty drops, given daily.—*Deutsche med. Wochenschr.*, 1892, No. 7.

Creasote for Influenza.—ISELIN (*Corr.-bl. f. Schw. Aerzte*) recommends creasote in doses of from fifteen to seventy-five minims daily in the treatment of influenza.—*Deutsche med. Wochenschr.*, 1892, No. 7.

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SATURDAY, APRIL 16, 1892.

CONSULTATION WITH SECTARIANS AND QUACKS.

We are in receipt of a letter, asking advice upon the subject expressed in the caption of this article. Our correspondent says:

"There is a man here who tried to graduate from the University of Pennsylvania, but failed three times. He then attended some homeopathic college, and graduated. He prescribes for or treats patients according to whichever school they wish. As a young physician, I am advised to keep clear of him, yet Dr. ——, an elder graduate, meets him, particularly when there is a $10 bill waiting. Dr. —— is a member of —— County Medical Society, and if it is right for him, why not for me, who need a $10 fee more than my older brother? Yet I have refused three consultations, or $30, for fear that I would be violating that code held so sacred by physicians. Sometimes good physicians blunder on these so-called quacks, meet at the bedside, discuss the case privately, advise as to future treatment, collect $10, but *say* that no consultation has been held. What is right? What is wrong? Tell me that I may know if I am justified in foregoing the money I, as a struggling young man, so much need."

Before replying to the quoted portion of this letter, we desire, in passing, to deprecate the use of the terms "regular" and "irregular" practitioners, elsewhere employed by our correspondent.

There are but three possible divisions of medical practitioners—physicians, sectarians, and quacks. The physician is catholic, the sectarian is exclusive, and the quack is commercial. The true physician and the true sectarian may be both honest. The quack may be scientifically educated or grossly ignorant; he may belong to the so-called "regular profession," to one or all of the "irregular" sects, or be openly an Ishmaelite. His actions, not his pretences, determine his standing.

The question put by our correspondent was discussed at length at a meeting of the Philadelphia County Medical Society, and two papers taking opposite views of the question were published in The Medical News for October 18, 1889. To them we would refer our correspondent for a more detailed consideration of the theme than our present space will permit.

One of the authors contended that, while it is the duty of members of the American Medical Association to obey the code, which at present forbids consultation with those professing to base their practice on therapeutic dogmas, to the exclusion of accumulated experience, and the aid of the sciences collateral to medicine, yet that the construction of that prohibition as against educated homeopathic practitioners was unwise and unjust. He claimed that at the Hahnemann Medical College, of Philadelphia, the text-books and methods of instruction were the same as those employed at the University of Pennsylvania and at Jefferson Medical College—that the graduates of Hahnemann College were therefore thoroughly educated physicians, and hence one might properly meet them upon an equal footing at the bedside. In reply, it was argued that homeopathy, if it meant anything at all, meant exclusive treatment on the principle of *similia similibus curantur;* that hence there was no possible common ground upon which those who consistently believed in and practised homeopathy (honorable sectarians), could meet physicians, in consultation, and that consultation, being thus doomed from the first to be fruitless, was manifestly immoral. It was further urged, that if, on the other hand, the person calling himself a "homeopath" did not honestly believe in the doctrines and carry out the practice of his sect, he was a not-honorable impostor, and that while agreement as to treatment might be possible, yet to meet such a one in consultation would be to

condone his duplicity and thus partake in his dishonor. The almost unanimous voice of the Society was with the latter speaker.

Persons of the kind alluded to by our correspondent, who profess to practise according to either "old school" methods or "new school" methods, as their patrons may wish, are so manifestly incompetent, insincere, and commercial, that we fail to understand how the thought of meeting them in consultation can for one moment enter the mind of any honorable physician. The man whose honor can be purchased for $10 or for $10,000 is unfit for membership in any decent society, medical or non-medical.

It has been well said by a leading jurist of this city: "He that studies the provisions of the law that he may do everything not punishable, has our just contempt." In line with this thought is the position of THE MEDICAL NEWS, that consultations with quacks, and other acts forbidden by the code of the American Medical Association, are not to be avoided merely because they are thus forbidden, but because such acts are wrong in themselves, and will continue to be wrong, even though the efforts of the mercenary and the misguided should succeed in effecting the formal repeal of the prohibitory statutes. We congratulate our correspondent upon his firmness in refusing to follow the bad example of Dr. ——.

The question herein considered is one of simple honesty. It has nothing to do with the correctness or incorrectness of the "homeopathic," "naturopathic," "rectopathic," "hydropathic," "psychopathic," or any other "pathic" dogmas. We recognize that applied therapeutics is an art, not an exact science, and that men have a right to differ in opinion and in method.

If those graduates of the Hahnemann or any other sectarian college, who have abandoned Hahnemannian practice—and only such ask for consultation with physicians—would publicly renounce their previous contentions in favor of the exclusive truth of the so-called "law of similars," drop the name of "homeopath," and submit to examination by a properly constituted committee of any State or county medical society, we would not oppose their admission to that society, and their full and free recognition as physicians. So long, however, as the commercial value of the name "homeopathy"—and such a value it undoubtedly has, in common with mesmerism, faith-cure, "professional" and "non-professional" patent medicines, and other impostures—so long as the trade-mark value of the name "homeopathy" prevents these men from adopting the open and manly course indicated, we do not see how self-respecting physicians can consent to professional association with self-confessed medical tradesmen.

OCULAR INJURY IN FORCEPS-DELIVERIES.

UNDOUBTEDLY the difficulties encountered in the delivery of the fetal head by the aid of forceps may excuse the somewhat frequent injuries inflicted in the performance of this delicate operation, but it may also be said that obstetricians may too often have ignored the severe injury to the eyes that may be caused by malposition of the blades of the instrument. These traumata may serve to make one more slow to apply the forceps, and also more careful when their application is ultimately required by the exigencies of the case. The few cases that have been reported serve to suggest many that are not reported, and yet taken together there may be gathered quite a large number on record. Several cases of luxation of the globe are mentioned by ZANDER and GEISSLER (*Die Verletz. d. A.*, 1864), and one by BULLER (*Canada Med. Record*, 1887). BERGER (*Arch. f. Aug.* xvii, 1887) reports a case of paralysis of the levator palpebræ and superior rectus, with ptosis.

PAUL BLOCH (*Centralbl. f. prak. Augenheilk.*, May, 1891) enumerates 438 cases of paralysis of the abducens in 116,000 patients who visited PROF. HIRSCHBERG'S eye clinic from 1869–90. Of these, 31 were congenital, and 3 of these originated during birth from the use of the forceps. He has compiled the literature of the subject of forceps-injuries as follows: ZWEIFEL (*Lehrbuch der Geburtshülfe*) attributes traumatic exophthalmos to compression of the cranial bones, and states that eye-lesions are known to be produced by introduction of the forceps. OLSHAUSEN (*Volkmann's Vortr.*, 1870, i, 8) describes creases over the eye as due to the use of forceps. PAJOT (Thèse, Paris, 1853) mentions slight ecchymoses, particularly on the upper eyelids, in difficult births and where the forceps was used, which DUBOIS considered due to compression, and which occasionally furnished the starting-point for inflammation of the lids. BOUCHUT (*Traité des Maladies des Nouveau-nés*, 1862) observed fracture of the frontal bone, with complete exophthalmos, following the use of the forceps. FEHLING (*Peter Müller's Handb. der Geburtshülfe*) mentions the

presence of marked edema of the eyelids and temporary ptosis following the application of the forceps. Kustner (*Peter Müller's Handb. der Geburtsh.*, 1889) gives a very detailed report of injuries of the orbital region in births in which the forceps was used. Schroeder mentions among the injuries due to forceps, fractures of the bones of the roof of the orbit, with exudations into the cerebrum. Lomer found in twenty-seven cranial fractures due to the use of the forceps, ten fractures of the frontal bone in which the pars orbitalis was implicated four times. He also reports a case delivered by Schroeder in which there was exudation of blood into the anterior chamber of right eye, with slight exophthalmos. Hofmann (*Monatsschrift f. Geburtskunde*, 1854) reports two cases of exophthalmos in children of the same woman. In one instance there was fracture with deep depression of the roof of the right orbit and wing of the sphenoid, together with fissure of the roof of the orbit on the left side. Other cases of similar injuries are reported by Nadaud (*Les Paralysies Obstétricales des Nouveaunés*), Coccius (*Programm einer Gedenk. f. G. Rose*, Leipzig, 1870), Steinheim (*Deutsche med. Wochenschr.*, 1883, No. 17) and others.

TUBERCULOCIDIN—A REMEDY FOR TUBERCULOSIS.

When, more than a year ago, the announcement was made that a remedy for tuberculosis had been discovered, the entire civilized world was carried away by the enthusiasm of the moment. It required the bitter lesson of experience to demonstrate that a remedy so potent for good as tuberculin was believed to be, was also capable of incalculable mischief. The reaction was so decided, the disappointment so keen, that complacent faith gave way to extreme skepticism; and to day reports of wonderful results in the treatment of tuberculosis are viewed with querulousness, if not with suspicion. Earnest investigators have, however, devoted themselves to the problem, and it seems as if the promise of the first announcement would yet be realized. In the *Deutsche medicinische Wochenschrift*, 1891, No. 45, p. 1233, Klebs reported that by precipitation with platinum chloride and the so-called alkaloid reagents he was able to separate from tuberculin the substances upon which the deleterious effects of tuberculin depended, leaving in solution an albumose, which he believed to be the curative agent, and to which he has given the name *alexin* or *tuberculocidin*. Experiments upon animals showed that tuberculocidin fails to exercise the depressing influence upon the circulation that tuberculin does, and that, unless the dose be excessive, there is no febrile reaction. On the contrary, the treatment causes a dissipation of hectic fever.

Klebs (*Die Behandlung der Tuberculose mit Tuberculocidin*, Hamburg and Leipzig, 1892) believes that the efficacy of tuberculocidin depends upon an influence exerted on the tubercle-bacilli, resulting in their degeneration. Thus, large doses, by causing rapid disintegration of tubercle-bacilli, cause some elevation of temperature by a form of autoinoculation with tuberculin. Tuberculocidin does not cause necrosis of tuberculosus tissue, with dissemination of bacilli, and the development of a miliary tuberculosis. The process appears to be one of involution, associated with exudation. That tuberculocidin is not merely an attenuated form of tuberculin is demonstrated by the fact that, although the former represents by weight one-fortieth of the latter, an injection of a decigram (0.1) of the one is followed by no elevation of temperature, while an injection of two and a half milligrams (0.0025) of the other is followed by febrile reaction. In man the initial dose of tuberculocidin is about two milligrams (0.002); if this occasion no unpleasant manifestations, the dose is rapidly increased to a decigram (0.1), or a decigram and a half (0 15). Hectic fever constitutes no counter-indication; energetic treatment may cause its disappearance. The injections should be made daily for a month, and then be intermitted for a month, to be resumed or not, according to the indications present. When indicated, other therapeutic measures may be advantageously employed in conjunction with the injections. Nearly a hundred cases, principally of pulmonary tuberculosis, have been treated with tuberculocidin. Of seventy-five in which a reasonable time had elapsed, fourteen were cured; forty-five were improved; fourteen remained unimproved; and two died. Complications were universally wanting.

The results reported are most encouraging. We have learned not to be over-sanguine, and we shall await with much interest the outcome of the investigations now in progress that promise so much in the treatment of a disease the curability of which we have only recently learned to appreciate.

REVIEWS.

THE PRACTICE AND PRINCIPLES OF MEDICINE. DESIGNED FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE. By WILLIAM OSLER, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University, and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore, etc. Large 8vo, pp. xviii, 1078. New York: D. Appleton & Co., 1892.

BY reason of extensive clinical, pathologic, and teaching experience, of exceptional opportunity and broad training, and of rare scientific attainments, there are few men better qualified than Dr. Osler to write a work on the Practice of Medicine. Here in Philadelphia, where Dr. Osler spent but too few busy years, he will not soon be forgotten; the impress of his work and character will long remain, and the impetus given to careful pathologic study and observation will be transmitted through his colleagues, his assistants, and his pupils. To say that Dr. Osler has performed his task well, is but to echo the verdict concerning the work he has done in the past. If there were one fault of which we would complain, it is expressed in the wish that he had said more than he has. Everywhere throughout the work one feels the delightful personality of the man. Every page contains evidences of original observation and is marked by an enlightened conservatism.

It would be difficult to select any one section and say that it is much better than the others. All are conspicuous for their comprehensiveness. The descriptions are in places concise, but there are no important omissions.

The chapter on Tuberculosis, which, in accord with modern conceptions, is placed among the infectious diseases, is particularly full and brought up to date. The subject is considered under the subdivisions: (*a*) acute (general, miliary) tuberculosis; (*b*) tuberculosis of the lymph-glands ("scrofula"); (*c*) pulmonary tuberculosis: (1) tuberculo-pneumonic phthisis (acute phthisis), (2) chronic ulcerative phthisis, (3) fibroid phthisis; (*d*) tuberculosis of the serous membranes; (*e*) tuberculosis of the alimentary canal; (*f*) tuberculosis of the liver; (*g*) tuberculosis of the brain and spinal cord; (*h*) tuberculosis of the genito-urinary apparatus. In a classification otherwise so complete it might have been well to have included also tuberculosis of the bones and joints, and tuberculosis of the skin. We think, too, the word phthisis might well have been permitted to drop into the obscurity out of which it originated, as the name but perpetuates a false or inadequate pathologic conception.

The article on Syphilis is a praiseworthy one. There seems, however, to be some inconsistency in the statements that "clinically, pulmonary syphilis is not of much importance, as the cases can rarely be diagnosticated," and that "the diagnosis of syphilis of the liver is very important, since upon it the proper treatment depends." The second dictum is the correct one and applies equally to all organs.

In the definition of pneumonia it is said that "an organism—the *diplococcus pneumoniæ*—is invariably found in the diseased lung." The statement is too sweeping, and liable to give rise to misapprehension, as at least one other organism seems to be the etiologic factor in a not inconsiderable proportion of cases.

We think, too, the word carcinoma had better have been substituted for cancer. Cancer has been and is yet occasionally employed to designate malignant neoplastic disease, including carcinoma and sarcoma especially. A proper use of the specific designation will in every case tend to prevent possible confusion.

There seems to have been a difference between the author and the proof-reader as to the correct spelling of the word characterize.

Dr. Osler's work needs no special laudation. It speaks for itself. We most heartily commend his *Practice of Medicine* to those who desire to be in possession of the most recent and best knowledge on the subject with which it has to deal.

DISEASES OF THE THROAT, NOSE, AND EAR. A CLINICAL MANUAL FOR STUDENTS AND PRACTITIONERS. By P. McBRIDE, M.D., F.R.C.P. Edin. With colored illustrations from original drawings. Philadelphia: P. Blakiston, Son & Co., 1892.

THIS book, as the author states in the preface, is designed for the student and general practitioner rather than for the specialist. The student will find it a most excellent manual, but for the general practitioner, with his multifarious duties, it is altogether too technical and voluminous. Owing to the great difficulty in examination of the parts, the majority of diseases of the throat, nose, and ear, cannot be diagnosticated, to say nothing of treatment, by any but those specially trained in manipulative skill and use of instruments. The book, therefore, will appeal particularly to those engaged in this special work, and to such it will be almost invaluable. In a clear, direct manner are presented the results of the experience of some of the best teachers in two countries. While it may be argued that there is little in the book that is new, it must be acknowledged also that there is little that is not good.

Divided into four sections, the work treats of diseases of the pharynx, of the larynx, of the nose, and of the ear.

A regular systematic course is followed throughout each section. We are struck by the small list of remedies recommended. Peroxide of hydrogen and ichthyol, so valuable in atrophic rhinitis, are omitted entirely in this connection, although the former is mentioned as a possible remedy in chronic suppuration of the middle ear.

The section on diseases of the pharynx is specially interesting and generally valuable, because, of all the parts, the pharynx is the most accessible. Like those who have preceded him, however, the author has not done justice to the tonsil, which is responsible for so much trouble in this region. He says nothing of the peculiar adhesions of the pillars of the fauces, and the muco-muscular bands or capsules that often surround and envelop the tonsil, blocking up secretions and causing inflammation of adjacent parts.

In the diagnosis and treatment of laryngeal tuberculosis, Koch's tuberculin is mentioned, but no positive opinion is given as to its value.

In the last instructive section, on diseases of the

ear, several operative procedures, such as opening the mastoid cells and antrum, are clearly and accurately described; but the operation, for which some of our American aurists hope and claim so much, namely, removal of membrane and ossicles for deafness and chronic suppuration, is only referred to as a somewhat doubtful experiment. The work is extremely conservative throughout, and surgical interference is recommended only when less radical measures are sure to fail.

On the whole, there is little in the book that we would have different. The expression "*rude* health" for good health, is a criticisable colloquialism.

A Practical Manual of Diseases of the Skin. By George H. Rohé, M.D., Professor of Materia Medica, Therapeutics, and Hygiene, and formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore, etc. Assisted by J. Williams Lord, A.B., M.D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons; Assistant Physician to the Skin Department in the Dispensary of Johns Hopkins Hospital. 12mo, 303 pages. Philadelphia: The F. A. Davis Co., 1892.

Our knowledge of diseases of the skin has increased so largely during the past ten or fifteen years that it is no longer possible for an author to give a complete *résumé* of dermatology in the space occupied by a handbook. An abstract may, of course, be prepared in the compass of such a book, but the information contained in such works is not sufficient for the needs of the practitioner. In the book before us matters are left out concerning which physicians, we think, would like to be informed—such, for example, as the newer modes of applying remedies, as with plasters, salve-muslins, and pastes of different kinds. The views expressed, on the whole, are such as govern the teachings of the majority of American dermatologists, although we note statements that must needs stand correction, such as that lichen scrofulosus "has not been observed in the United States."

The treatment of leprosy is dismissed with literally a half-dozen lines, being altogether insufficient for so important a subject. The chapter devoted to the cutaneous manifestations of syphilis is the longest and the best. Authors are quoted here and there, but, as a rule, without the references being given. The pathology and etiology of the several diseases are hardly up to date, the mention of the influence of microörganisms, as in furuncle and sycosis, being omitted. Psorospermosis, which has excited so much interest and discussion of late, is not referred to. Urticaria pigmentosa is likewise not mentioned. Attention is called to these few points with the hope that in the next edition they may be incorporated, to the improvement of the book.

The Etiology, Pathology, and Treatment of Diseases of the Hip-joint. By Robert W. Lovett, M.D. Boston: G. H. Ellis, 1891.

This admirable little book of Dr. Lovett's secured the Fiske prize in June, 1891, and is a most carefully prepared treatise upon the various diseases of the hip-joint, with especial reference, of course, to tuberculous articular ostitis. He devotes, however, excellent chapters to acute arthritis and synovitis, as well as to arthritis deformans, Charcot's disease, congenital dislocations, and hysterical affections. His work shows careful consideration of the most recent pathologic views relating to local tuberculosis as it affects the bones and joints. His description of the invasion of the joint from tuberculous foci in the epiphyseal line of the femur accurately expresses the ordinary course of this most insidious lesion. He does not deny the fact that cases occasionally arise within the joint, but they are exceptional. The action of traumatism and heredity, both of which lessen the resistive power of the individual against the degenerative process, is well considered.

He divides the treatment into mechanical and operative, the mechanical methods being subdivided into—

(*a*) Protection.
(*b*) Fixation.
(*c*) Traction.

He argues in favor of traction both in the recumbent and erect postures, and wisely insists that any apparatus tending to limit motion at the hip must extend high enough to embrace the bones of the thorax.

With good reason he advises the use of axillary crutches and of a high shoe on the well foot even when the long traction splint is used.

The sentence on page 123 is especially to be commended. "The writer would gladly advocate in any way the necessity of greater joint-rest in connection with ambulatory traction treatment."

His description of the operative treatment of hip disease is meager and is limited to excision. No mention is made of the more recent treatment by iodoform injections into the joint and into the tuberculous tissue.

The paper and the style of the book is excellent, and the reproductions of the photographs (which are numerous) are in many instances exceedingly satisfactory. Altogether the work is most heartily to be praised.

A Dictionary of Treatment; or Therapeutic Index, Including Medical and Surgical Therapeutics. By William Whitla, M.D., Professor of Materia Medica and Therapeutics in the Queen's College, Belfast, etc. Revised and adapted to the Pharmacopeia of the United States. 8vo, pp. 920. Philadelphia: Lea Brothers & Co., 1892.

This is a book for the busy general practitioner. It is more than a therapeutic index, presenting as it does clinical therapeutics in its broadest aspect. The names of diseases and of prominent conditions and symptoms are arranged alphabetically, while under each title is presented a concise yet thorough consideration of the best and generally accepted methods of treatment, precedence generally being given to those the efficacy of which has been demonstrated in the experience of the author. No department of medicine has been ignored. Some of the articles are quite full, while none have been treated superficially. It is upon these facts that the usefulness of the work for the general practitioner depends. Thus, we find that the article upon Phthisis occupies twenty-four pages, while nine additional pages are given to the subject of Tuberculosis, including a consideration of phagocytosis and of the therapeutic employment of

tuberculin, of goat's blood, of the serum of dog's blood, of potassium cantharidinate and of zinc chloride; the article on Typhoid Fever occupies sixteen pages; that on Valvular Lesions of the Heart fifteen pages, while more than five additional pages are taken up with a consideration of the treatment of other morbid conditions of the heart; fifteen pages are devoted to Neuralgia, eleven to Syphilis, Cancer, and Insomnia, each; and ten to Bronchitis, Croup, Diabetes, and Rheumatism, each; Eczema is given nine pages; Lupus Vulgaris, eight; Ovarian Tumors receives eight; Inflammation of the Ovary, an additional three; the treatment of Stricture of the Urethra occupies seven, that of Intestinal Obstruction six, and that of Hernia six in addition; Locomotor Ataxia receives five pages; Conjunctivitis, four; Mastitis, four; Labor, three; and Abortion, three. An index of nineteen pages gives completeness to the work, and renders reference easy. Legitimately used, this book will be of great assistance to the medical practitioner.

The Hydriatric Treatment of Typhoid Fever, according to Brand, Tripier and Bouveret, and Vogel. By Chr. Sihler, M.D., Ph. D., Professor of Histology in the Medical Department of the Western Reserve University; formerly Fellow of the Johns Hopkins University, and Assistant in the Biological Laboratory. 12mo, pp. 340. Cleveland, Ohio: Chr. Sihler, 1891.

When the fellows that "only heard of it last night" become so enthusiastic over a therapeutic expedient, as has been the case recently in certain quarters with regard to the method of treatment of typhoid fever by systematic cold-water bathing, it is not unwise to return and give credit with due thanks to the original source.

For this reason we welcome Dr. Sihler's little book, in which, so far from claiming to be the discoverer of this method, which is unquestionably the treatment *par excellence* in typhoid fever, the author has been careful to give due credit to Brand, the originator, and to Vogel, Tripier and Bouveret, Glénard, and the other devoted disciples in Germany and France, to whom the final and full establishment of the method in professional recognition is due.

The object of the author—"to enable the medical profession of the United States to use the hydriat[r]ic method in the treatment of typhoid fever; to enable the physician to become familiar with the details of the method; to inform him about the modifications necessary in special cases; to give him a rationale for its mode of action; to state the results obtained by others"—has been well carried out, and despite the many unfortunate typographic blunders, and generally poor book-making, we can cordially commend the work to every practitioner who desires to be fully informed on one of the most important subjects in practical medicine.

There is hardly another instance in the history of medicine in which, despite the scoffing of the prejudiced, the blunders of the incompetent, and the sneers of the ignorant, a physician has for so long a period, so modestly, so courageously, and so scientifically persisted in a course which he knew to be right, as has Ernst Brand, of Stettin, and his name deserves to be enrolled in the short list of the benefactors of humanity.

The Comparative Anatomy of the Domesticated Animals. By A. Chauveau. Revised and enlarged by S. Arloing. Second English edition, translated and edited from the fourth French edition by George Fleming, C.B., LL.D., F.R.C.V.S. New York: D. Appleton & Co., 1891.

For nearly forty years Chauveau's *Traité d'Anatomie Comparée des Animaux Domestiques* has been the standard anatomy at the French veterinary schools, and for nearly twenty years Fleming's translation has occupied a like position in England and America.

Many works treating of the same subjects have appeared during the last two decades in both languages, but no author has equalled Chauveau in accuracy, thoroughness, or clearness of description; so that his work retains its high position. But an anatomy, however good originally, must grow old in twenty years, and it is, therefore, fortunate that a new edition has been issued.

The new Chauveau is larger and better than the old; the descriptions are revised, parts have been added, and new cuts inserted. As new features we notice the parts relating to the anatomy of the ass, of the camel, and of the rabbit.

Throughout the work the horse is taken as the standard, and most of the anatomic descriptions are based on this animal, while the others are studied by comparison.

The first chapter is devoted to defining the positions of the domesticated animals in nature and to general considerations, and is followed by descriptions of the various parts of the body, beginning with the organs of locomotion and ending with a chapter on embryology.

Minute descriptions are given for dissection, so that the book is adapted to the wants of the beginner as well as to those of the specialist.

The work is so perfect throughout that there is no single part to which we can call particular attention; and simply commend it as the best guide to the study of the anatomy of the domesticated animals.

The work comprises 1084 pages, and is nicely printed on good paper.

The Chinese: Their Present and Future; Medical, Political, and Social. By Robert Coltman, Jr., M.D., Surgeon in charge of the Presbyterian Hospital and Dispensary at Teng Chow Fu, etc. Illustrated with fifteen fine photo-engravings. 8vo, pp. viii, 212. Philadelphia and London: F. A. Davis, 1891.

Dr. Coltman writes in an entertaining way of his early interest in the Chinese, and of his final determination to visit that country as a medical missionary. He travelled through the country from Shanghai to Chinanfu, where he was stationed, and evidently used both his eyes and his ears. His remarks upon the manners and customs, the social habits, the food, the position of woman, and the vices of the Chinese are all instructive.

The most interesting chapters to the physician are those upon the diseases prevalent in China and upon leprosy. Dyspepsia and other diseases of the alimentary tract are the most common. Next in frequency are eye-diseases of all kinds. Variola is extremely common, Dr. Coltman declaring that nearly everyone has it at

some period of his life. Vaccination is practised, but the virus is in many cases impure, and the author believes that syphilis and tuberculosis are often communicated by it. Measles and scarlet fever occur occasionally; typhus is frequent in North China, and is associated with relapsing fever; cholera is epidemic every few years, and malarial fevers abound. In fact, most of the specific fevers and diseases are encountered, at least, occasionally.

As regards leprosy, Dr. Coltman thinks it cannot be very contagious or infectious, because, "in spite of the fact that the leper is under no quarantine regulation of any kind, leprosy has not spread to any appreciable degree in the last century." He believes, however, that it is in most cases hereditary; that it is inoculable, and that the previous saturation of the body with syphilis affords a favorable soil for the development of the disease.

We are rather surprised at his assertion that the Chinese are no more immoral than Americans or English. Private letters from the north of China had produced a very different impression.

Consumption—How to Prevent It and How to Live with It; Its Nature, its Causes, its Prevention, and the Mode of Life, Climate, Exercises, Food, Clothing Necessary for its Cure. By N. S. Davis, Jr., A.M., M.D., Professor of the Principles and Practice of Medicine, Chicago Medical College, etc. 8vo, pp. viii, 143. Philadelphia and London: F. A. Davis, 1891.

This little book has been written for patients—not for physicians. The author has sought to impart such information regarding the prevention of pulmonary tuberculosis and its hygienic management as he has found by experience that patients need. He accepts the tubercle-bacillus as the cause, and believes that a predisposition to the disease is inherited. He denies positively that it is contagious, says nothing about infection, and yet insists upon the greatest care in the destruction of the sputa; declares that a tuberculous mother should never suckle her children, and that care should be exercised to avoid milk from tuberculous cows. It has always seemed to us difficult to deny the possibility of contagion in an infectious disease.

Much useful information is given as to the choice of climate, food, exercises, and clothing. Many will not agree with Dr. Davis that those who suffer from frequent hemorrhages are benefited by a sea voyage, and we think he speaks too highly of the general good effects of sea-air in pulmonary tuberculosis.

The book, as a whole, will be very helpful to patients who need elaborate instruction and are intelligent enough to follow it.

Food in Health and Disease. By I. Burney Yeo, M.D., F.R.C.P., Professor of Clinical Therapeutics in King's College, London, etc. Small 8vo, pp. x, 583. Philadelphia: Lea Brothers & Co.

Doctor Yeo is so favorably known both as a clinician and as a writer on dietetics that we have learned to look with confidence and authority upon any work emanating from his pen. As the digestive canal is so commonly the portal of entry, directly or indirectly, of disease, a study of conditions in which it takes a conspicuous part must receive most earnest consideration. The preservation of health implies the maintenance of an equable adjustment between income and expenditure. It is established that the underfed fall ready prey to disease; the overfed and the badly-fed may be included in the same category. Nothing can be clearer than the inference that if immunity from disease depends, among other things, upon the quality of the bodily fluids, such protection can be most readily secured by the establishment of the highest nutritive condition. This end is not to be attained by means of drugs, but by the judicious use of food. The art of dietetics is even more important than that of therapeutics; it is the office of the former to aid in repelling as well as in curing disease. Even in many conditions of disease the best treatment consists in encouraging through the nutrition the natural tendency to recovery. Dr. Yeo fully considers the subject of food in all its varied aspects: its nature, origin, and purposes; its digestion, assimilation, and utilization; its cooking, preparation, and preservation. An appendix contains dietaries for hospitals and invalids. A careful perusal of this work will repay those interested in the philosophic, physiologic, and therapeutic aspects of food.

A B C of the Swedish System of Educational Gymnastics. A Practical Handbook for School-teachers and the Home. By Hartvig Nissen, Instructor of Physical Training in the Public Schools of Boston, etc. With seventy-seven illustrations. Small 8vo, pp. vii, 107. Philadelphia and London: F. A. Davis, 1891.

Lack of physical training is a recognized defect in our educational system. When we consider that a healthy body is not less important than a healthy mind, the necessity of systematic physical education makes itself apparent. Fortunately, courses in physical exercise have been incorporated into the curricula of the schools of some of our cities, and the innovation can only be attended with beneficial results. The most meritorious procedure may, however, be rendered nugatory by faulty or inefficient methods of application. By simplicity of description and generosity of illustration Mr. Nissen has succeeded in placing within the reach of parents and teachers a manual that will greatly facilitate the systematic physical training of children and others, at home and in school. The spirit of the work is most heartily to be encouraged. Only the Swedish system is described. It is considered the best for schools and homes. For colleges, universities, and gymnasia a combination-system is thought better suited.

The Pathology and Prevention of Influenza. By Julius Althaus, M.D., M.R.C.P., London, Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park. New York: C. P. Putnam's Sons, 1892.

This brochure, of some sixty odd pages, is an amplification of a paper on "The Pathology of Influenza," which the author read before the Medical Society of London, during the latter part of 1891. The paper is

devoted to demonstrating (1) that the symptoms of influenza are owing to the action in the system of a special poison secreted by a pathogenous bacillus; (2) that this poison has a special affinity for a definite center of the nervous system, which is irritated and depressed by it; (3) that an antidote to neutralize the effects of the poison is formed in the blood of the patient, and tends to effect a spontaneous cure of the disease; and (4) that the nearest approach to this antidote that we at present possess appears to be animal vaccine-lymph, which should, therefore, be used as a preventive of influenza.

Whilst some of the author's conclusions are based upon theory rather than fact, the work, as a whole, is interesting and instructive. Many novel suggestions are made in the work, of which time and experience alone can test the utility.

The Pocket Pharmacy, with Therapeutic Index. (A *Résumé* of the Clinical Applications of Remedies adapted to the Pocket-case, for the Treatment of Emergencies and Acute Diseases.) By John Aulde, M.D., Member of the American Medical Association, of the Medical Society of the State of Pennsylvania, of the Philadelphia County Medical Society, etc. 12mo, pp. 204. New York: D. Appleton & Co., 1892.

The author states that his work is "in the nature of a plea for smaller doses, to be administered in accordance with physiological deductions," and that it is "the outgrowth of personal experience in general practice." He likewise states that "the book will prove of value when the physician carries a pocket-case, as he will be enabled to exhibit the required medicament at once, instead of waiting for a messenger to obtain it from the nearest pharmacy." The author, furthermore, "believes that it will prove especially useful to the recent graduate, who, while supposed to be intellectually rich, is often technically poor. To write in a proper manner a complicated prescription in the presence of a patient, is likely to cause a mental strain not exceeded in passing the examination in practice or materia medica."

Until our colleges increase their facilities for bedside instruction, and until our States have proper examining boards, there will, indeed, be a large demand for books of this kind. The only addition that we might suggest, in order to render the book still more useful to one unable to withstand the strain of writing a prescription in the presence of a patient, would be some infallible machinery for making a correct diagnosis.

Surgical Diseases of the Ovaries and Fallopian Tubes, Including Tubal Pregnancy. By J. Bland Sutton, F.R.C.S. Philadelphia: Lea Bros. & Co., 1892.

This book has appeared most opportunely. Hitherto the profession has been furnished with the clinical experiences of various observers, viewed in various lights, according to the fancy of the writer, until considerable confusion has resulted. The writer in this little work has undertaken to present in a concise form the facts and theories collected from the most reliable sources. The pathology of the ovaries and Fallopian tubes is obviously of great importance; the author, with praiseworthy originality of description and arrangement, has attempted a careful exposition of the relation between the clinical and pathologic aspects of the subject.

The chapter on ovarian hydrocele is of special interest, and Part III, devoted to tubal pregnancy, deserves a place in the classic literature of medicine. The simplicity of the author's method of treating this branch has done away with the intricacies of classification and the confusion that belong to the development of a new subject. It is clear that the secret of the author's insight into the subject lies in the care with which he has devoted himself to researches in pathologic and comparative anatomy.

Nursing in Abdominal Surgery and Diseases of Women. By Anna M. Fullerton, M.D. Philadelphia: P. Blakiston, Son & Co., 1891.

In this work Dr. Fullerton has followed her accustomed clearness and comprehensibility of style. She has furnished a long-desired handbook from which nurses, in their moments of leisure and opportunities for study, can acquire that knowledge that is demanded from them in times of emergency. Every operator has experienced the interruptions and drawbacks that arise during a critical operation from the inefficiency of his assistants. This often comes, not from any want of interest or from negligence on the part of the nurse, but from the want of practicalness in her training. Every nurse, on the other hand, has felt the keen sense of chagrin at finding herself deficient in knowledge which she had thought within her possession, at the moment when she has been most in need of it. Dr. Fullerton has clearly discerned the requirements in the training of nurses for this special work, namely, the inculcation of knowedge that will give an intelligent idea of the work before them, and the insistence upon habits of promptness and forethought. For both the physician and the nurse this book presents the important points in a clear and impressive way. The chapter on asepsis and antisepsis is well written, and brings the subject forcibly to the attention of the pupil-nurse.

Essentials of Medical Physics. By Fred. J. Brockway, M.D., Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, New York. Philadelphia: W. B. Saunders, 1891.

This volume is number twenty-two of Saunders's Question Compends, and is intended for use in preparing students for examination in physics. The author has endeavored to compile a work which shall occupy a position midway between the elementary books on the subject, which do not contain all that is necessary for the student to know, and the larger works—such as Ganot's—which are too voluminous to be available as text-books.

In our opinion, the author has dealt with a subject which to the student is usually surrounded with more or less difficulty, and in a manner that will make the theme not only comparatively easy, but also of interest. Of course, the present volume is but an epitome, and as such its great value is as a supplement to a regular course of lectures or of study, in order that the student

may be enabled to review the salient points of physics in a short time.

The book contains one hundred and fifty-five illustrations, and has a comparatively complete index.

Lessons in the Diagnosis and Treatment of Eye Diseases. By Casey A. Wood, M.D., Formerly Clinical Assistant, Royal London Ophthalmic Hospital (Moorfields); Microscopist and Pathologist to the Illinois Eye and Ear Infirmary; Professor of Ophthalmology, Post-Graduate Medical School; Oculist and Aurist to the Alexian Brothers Hospital, Chicago. Small 8vo, pp. x, 154. Detroit: George S. Davis, 1891.

Careful reading of this little volume shows us that in it we have a good and well written, though unfortunately unfinished, book. Particularly are to be recommended the terse and comprehensive lessons on Diseases of the Cornea and Sclerotic, and on Glaucoma; while that on the Ocular Affections in General Diseases is worthy the perusal of anyone interested in the subject.

We can unreservedly offer this manual as an excellent companion to freshen the mind of the advanced ophthalmologist, and as a wise counsellor to safely guide the general practitioner and medical student through the mazes and pitfalls of modern ophthalmology.

Essentials of Medical Electricity. By D. D. Stewart, M.D., and E. S. Lawrence, M.D. Saunders' Question Compends, No. 23. Pp. 158. Philadelphia: W. B. Saunders, 1892.

The perusal of this little book is apt to result in a genuine surprise to the reviewer, as the authors have evidently aimed at much more than an artificial aid to cramming. Throughout the whole of the brief space at their command they show evidences of a discriminating knowledge of their subject, and while the work is primarily for undergraduates, the principles are so well presented that it furnishes an excellent introduction to this study in the hands of a practitioner. The details for the treatment of individual diseases have not been slighted, the originality of some of them showing that imprint of experience so often wanting in book-writers. Considering the elementary character of the work there is, nevertheless, entirely too much space devoted to the historical part of the subject, both in the description of cells now unused and in the reproduction of full-page illustrations from a work that was old when the dynamo was discovered.

CORRESPONDENCE.

CHICAGO.

Commencement Exercises of Chicago Medical Colleges—Mortality Statistics of Chicago—The World's Fair and the Medical Profession.

The forty-ninth annual commencement exercises of Rush Medical College were held at Central Music Hall, March 29th. It was a memorable gathering, for it was the largest class in the history of "Old Rush," numbering 142. Dr. E. L. Holmes, president of the College, delivered the doctorate address. Professor Roswell Park, of Buffalo, N. Y., was announced as an honorary member of the class.

The exercises of the tenth annual commencement of the College of Physicians and Surgeons were held at the Grand Opera House on the same date. The degrees were conferred by the president of the College, Professor A. Reeves Jackson. The graduating class numbered 42. The doctorate address was delivered by Professor Bayard Holmes.

The twenty-second annual commencement of the Woman's Medical College took place March 28th at Central Music Hall. Dr. Henry Wade Rogers, president of the Northwestern University, conferred the degrees, the graduating class numbering 19. The prizes were distributed and the hospital announcements made by Professor Charles Warrington Earle, dean of the Faculty.

Dr. I. M. Neely, registrar of vital statistics, has prepared his report to the State Board of Health of the number of deaths in Chicago during 1891. The report shows a total of 27,801. Mrs. Rose Armstrong died at the age of 110 years. Joseph Miner was 108 years old at the time of his death. Two others had passed the century mark—Maurice Lee, Catherine Butler, 101. Seventy-eight persons had passed the ninety mark. A list in part of some of the causes of death follows: Pulmonary tuberculosis, 2149; pneumonia, 2744; scarlet fever, 269; typhoid fever, 1946; cholera infantum, 1224; delirium tremens and alcoholism, 141; railroad accidents, 331; other accidents, 621; suicides, 248; homicides, 60; sunstroke, 30; under five years old, 12,886; colored residents, 375.

The World's Fair Entertainment Committee of the Medical Profession of Chicago recently met at the Sherman House. This committee has undertaken preparations for extending hospitality to members of the profession visiting the World's Fair by means of medical headquarters, and in exceptional cases by the giving of banquets and receptions. The following reported themselves as permanently authorized to act for their respective societies: Dr. John E. Owens, Dr. A. E. Hoadley, and Dr. J. B. Murphy, representing the Chicago Medical Society; Dr. Harold N. Moyer, Dr. D. R. Brower, and Dr. C. W. Earle, representing the Practitioners' Club; Dr. William E. Clark, Dr. C. D. Wescott, and Dr. A. H. Foster, the Pathological Society; Dr. J. H. Etheridge, Dr. F. E. Waxham, and Dr. L. L. McArthur, the Gynecological Society; Dr. T. T. Nelson, and Dr. Archibald Church, the Medico-Legal Society; Dr. J. C. Cook, Dr. H. H. Deming, and Dr. Milton F. Coe, the South Side Medical Society; and Drs. Hektoen, Winthrow, and Holmboe, the Scandinavian Medical Society.

NEWS ITEMS.

Marriage of Cousins.—To a correspondent: Does not the editorial in The Medical News, January 23d, answer your query?

For Poor Sick Children.—The Managers of the Children's Seashore House at Atlantic City desire to extend its benefits to the largest possible number of invalid children. With this object in view they offer to receive, free of charge *during June*, as many bedridden or crippled children from the hospitals, public institutions, and private homes of our city (Philadelphia) and vicinity as their institution will accommodate.

Application for the admission of such children should be made in writing to the "Physician in charge of the Children's Seashore House." Until June 1st his address will be 332 South Fifteenth Street, Philadelphia, and after June 1st, Atlantic City, N. J. Early application is desirable, and no child should be sent to the institution without previous application. The above offer does not include railroad fares.

Railway tickets are sold to patients coming to the institution at the rate of twenty-five cents for children and fifty cents for adults, each way. These can be obtained only by means of the requisitions upon the ticket agents, which are always furnished with the orders for admission.

New Chairs and Professors at the Jefferson Medical College.—The Board of Trustees of the Jefferson Medical College, at their meeting, April 7, 1892, instituted a chair of Clinical Gynecology, with a seat in the Faculty, and elected to the new chair Dr. E. E. Montgomery, who has been for a number of years professor of gynecology in the Medico-Chirurgical College. They also established the following clinical professorships, electing Dr. F. X. Dercum, professor of nervous diseases; Dr. E. E. Graham, professor of children's diseases; Dr. H. Augustus Wilson, professor of orthopedic surgery; Dr. H. W. Stelwagon, professor of dermatology; and Dr. W. M. L. Coplin, adjunct professor of hygiene.

Public Baths in Boston.—The *Boston Medical and Surgical Journal* states that a company, to be known as the Boston Bath-house Company, is soon to be incorporated to establish baths for the poor of Boston, following the steps of the chief European cities and the recently established People's Baths in New York. There is already a small establishment of this kind in Boston, where, during the first year, 3000 men, women, and children made use of it. It is hoped that after the baths are established they will be self-supporting. About $40,000 are needed for the establishment of the institution.—*Medical Record.*

The Medical Association of Georgia will hold its forty-third annual session at Columbus, Ga., April 20, 21, and 22, 1892. An interesting program is announced. Members of the medical profession are cordially invited to attend the session. Dr. G. W. Mulligan, of Washington, Ga., is the president of the Association; Dr. Dan. H. Howell, of Atlanta, secretary.

The Association of the Alumni of the Medical College of the State of South Carolina was organized at Charleston on March 11th, with the object of increasing the usefulness of the College, of establishing a well-equipped laboratory for instruction in biology and pathology, of cultivating a spirit of professional amity, and of endeavoring to uphold the highest standard of medicine. Dr. Eugene Wasdin, of the U. S. Marine-Hospital Service, was elected president, and Dr. C. B. Calson, of Charleston, secretary and treasurer.

The Iowa State Medical Society will hold its forty-first annual session at Des Moines, May 18, 19, and 20, 1892. A large number of papers in the various departments of medicine is announced. Dr. George F. Jenkins, of Keokuk, is the president and Dr. J. W. Cokenower, of Des Moines, secretary.

Obituary.—DR. JOHN S. STEWART, of Philadelphia, the son of Dr. Samuel S. Stewart, of Allegheny City, Pa., died on April 11th of pulmonary tuberculosis, at the residence of his uncle, Dr. Wm. S. Stewart. Dr. Stewart was born in Allegheny County, Pa., November 19, 1864. He was educated at the Western University and at the Medico-Chirurgical College, of Philadelphia, graduating at the latter institution with the highest honors of his class in 1885. He had endeared himself to his many patients and friends by a manliness and gentlemanliness and a combination of courtesy and self-respect rarely found. He was a successful and an exceptionally skilled ophthalmologist.

BOOKS AND PAMPHLETS RECEIVED.

The Mediterranean Shores of America. Southern California: Its Climatic, Physical, and Meteorological Conditions. By P. C. Remondino, M.D. Fully illustrated. Philadelphia and London: F. A. Davis & Co., 1892.

Diseases of the Throat, Nose, and Ear: A Clinical Manual for Students and Practitioners. By P. McBride, M.D., F.R.C.P. Ed. Illustrated in colors, from original drawings. Philadelphia: P. Blakiston, Son & Co., 1892.

The Pathology and Prevention of Influenza. By Julius Althaus, M.D., M.R.C.P. Lond. New York: G. P. Putnam's Sons, 1892.

Tenotomy, by Open and Subcutaneous Incision. By H. Augustus Wilson, M.D. Reprint, 1892.

Clinical Lecture on Tenotomy. By H. Augustus Wilson, M.D. Reprint, 1892.

The Pathology of Hip-joint Disease, with Illustrative Cases. By H. Augustus Wilson, M.D. Reprint, 1892.

Subacute Recurrent Multiple Neuritis. By J. T. Eskridge, M.D. Reprint, 1892.

Some Points in the Diagnosis and Nature of Certain Functional and Organic Nervous Diseases. By J. T. Eskridge, M.D. Reprint, 1892.

The Indications for Colotomy. By Charles B. Kelsey, M.D. Reprint, 1892.

A Quarter-Century's Retrospect of Laryngology. By Lennox Browne, F.R.C.S. Ed. Reprint, 1892.

Nomenclature of Diseases, to be Followed by Physicians in the Indian Service. By Robert G. Eccles, M.D. Pamphlet. Washington: Government Printing Office, 1892.

Clinical Report of Six Surgical Cases. By G. W. Cale, M.D. Reprint, 1892.

Transactions of the Medical Society of California. Session of 1891. San Francisco: Woodward & Co., 1891.

The Treatment of Epilepsy. By Guy Hinsdale, M.D. Reprint, 1892.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

MENTAL IMPROVEMENT FOLLOWING OPERATION ON THE SKULL.

BY HUGO ENGEL, A.M., M.D.,

CONSULTANT IN NERVOUS DISEASES AT ST. JOSEPH'S HOSPITAL AND IN CHARGE OF THE INFIRMARY FOR EPILEPTICS, ETC.

BRAIN-SURGERY, though still in its infancy, is rapidly advancing. The conditions under which the skull should be opened for the purpose of removing morbid states are being determined more and more accurately, especially by such careful and experienced men as Von Bergmann,[1] Horsley,[2] and Macewen,[3] and the field of usefulness for such operations as the enucleation of tumors, the emptying of cerebral abscesses, and the destruction of irritating foci in the cortical motor area is becoming limited more strictly, as we understand better the indications that alone should justify us in attempting such hazardous procedures as the introduction of the surgeon's knife into the encephalon. Although we have learned to look upon these operations as by no means free from danger, and while many surgeons have published their successful as well as their fatal cases,[4] comparatively little attention has been paid—and that little but recently—to one important subject, viz.: the consideration of the possibility of altering and improving psychic disturbances; to influence, therefore, the highest function of the brain, the mental sphere, by operations on the encephalon itself. What has been done in that respect has consisted mainly in the resection of the skull, when the latter seemed to be an obstacle to the normal development of the convolutions beneath it, or in the cutting away of diseased cortical tissue.

Especially in cases in which too early ossification of the skull caused a retardation in the physiologic growth of cortical tissue, or in which the too rapid closure of the anterior fontanel had given rise to microcephalic conditions, or in which the apparent malformation of the bony enclosure of the brain was thought to be responsible for idiotic and similar morbid states, have operations been performed with more or less success.

Here again may be mentioned a number of skilful operators who have contributed to the literature of the subject.[1]

Attempts have also been made to restore the mental equilibrium when, in consequence of chronic hemorrhagic pachymeningitis, localized accumulations of blood seemed to have caused dementia. As Von Bergmann[2] reports, Ceci[3] at a meeting of Italian surgeons first recommended operative interference in these cases, while Huguenin[4] has tried to prove that the pachymeningitic changes often met with in dementia paralytica (non-specifica?) are due to primary subdural hemorrhages. In this connection Keen's article on "Intra-cranial Lesions"[5] is of special interest, as it determines the main diagnostic points and the indications and contra-indications of operative interference and mentions the results to be expected from the latter.

It is the locality, the exact seat of the morbid lesion, which is of importance in all pathologic states concerning the encephalon or its bony enclosure, and here the gray cortical tissue plays a far weightier role than the white matter, as it has been found that certain impressions and impulses of which the conducting tracts were destroyed, selected new paths along which to travel. Every part, however, of the cortex has its definite function and can neither be gradually encroached upon nor be

[1] Ernst von Bergmann, Die chirurg. Behandl. der Hirnkrankh. Berlin, 1889.

[2] Horsley, Brit. Med. Journ., 1887, vol. i, April.

[3] Macewen, Brit. Med. Journ., 1889, vol. ii; 1888, vol. i.

[4] Jastrowitz, Deutsch. med. Wochenschr., 1888; W. W. Keen, Am. Journ. of the Med. Sci., Oct., 1888; idem, Oct. and Nov., 1889; idem, THE MEDICAL NEWS, 1890; idem, THE MEDICAL NEWS and Am. Journ. Med. Sci., 1891; v. Bergmann, Lehre v. d. Kopfverletz., 2. Aufl., 1880; Park, N. Y. Med. Journ., Nov. 3, 10, and 17, 1890; Seydel, Antiseptik und Trepanat., München, 1886; Hammond, THE MEDICAL NEWS, 1887; Heath, Lancet, April, 1890; Weir and Seguin, Am. Journ. Med. Sci., 1888; Bennett, Lancet, vol. ii, 1886; Birdsall, THE MEDICAL NEWS, 1887; and especially Horsley and Macewen, loc. cit.; also Bennett, Lancet, May, 1889; Ceci e Onetti, Ascsso intracranico, etc.; Barker, Brit. Med. Journ., 1888, vol. i; Drummond, Lancet, 1887; Sitzungsbericht des letzten med. Congress in Berlin, 1891; Keen, W. W., "Craniectomy for Microcephalus," THE MEDICAL NEWS, April 12, 1890; idem, reprint, Nov. 19, 1890; idem, "Jacksonian Epilepsy," Am. Journ. Med. Sci., Dec. 1891.

[1] Keen, Horsley, Macewen, v. Bergmann, loc. cit. and elsewhere; Volkmann, Beitr., Leipzig; Muhr, Archiv. f. Psych., 1890; Wiessmann, Deutsche Zeitschr. f. Chirurgie, 1884; Langenbuch, Berl. klin. Woehenschr., 1889.

[2] Von Bergmann, Die chirurg. Behandl. der Hirnkrankh.

[3] Ceci, "Emiparesi progr. sinistra, etc.," Com. al Congresso della Soc. Ital. de Chir., held in Geneva, 1887.

[4] Huguenin, referred to by v. Bergmann, loc. cit.

[5] W. W. Keen, "Intra-cranial Lesions," reprint, vol. vii Trans. N. Y. Med. Assoc., 1890.

suddenly destroyed or injured with impunity. Cases in which the diseased cortical motor area has been excised without giving rise to permanent palsies are no proofs to the contrary, and do not belong to this category; if anything, the transient paralysis resulting from such excision is in favor of the facts stated. For in these cases the same convolutions on the opposite, non-affected side, or more deeply-situated cells on the side of the lesion, assume the functions of the parts destroyed. Here the healthy centers, during the duration of the disease, have gradually become accustomed to perform the functions of the portions attacked by the morbid lesion.

Probably the convolutions on the right side exactly in a situation corresponding with those on the left side in right-handed persons in which the complicated speech-apparatus has its center (lower left third, Broca's, island of Reil) receive the same impressions as those active in the opposite hemisphere, but more feebly, and their associated connection with all other will-centers is not so intimate, but becomes gradually developed, as those in the left frontal lobe more and more fail to perform their duties, yet never in so high a degree. In this we find an explanation of the return of articulated language—though not a perfect or complete restoration—when hemorrhage destroys the speech-centers on the left side.

The functions of many convolutions are known, but what those of the frontal lobes are—excepting those mentioned—we can only conjecture. It is in these gyri that abstract ideas are formed. Here reside the centers of the highest intelligence; here thoughts originate. What we call quick perception, genius, talent, poetic feeling, narrow-mindedness, immoral character—all these dwell here. And here also is the only region in which Nature has made such an arrangement in the bony enclosure as to allow for more space, should such become necessary in later life, when the skull has already become a solid, unyielding whole. In the frontal sinus over each eye the laminæ are thinner; they may give way, and not only may the hollow spaces be encroached upon, but the outer skull may be even driven outward. What are called "bumps of knowledge" always receive their fullest development and final shape between the twenty-fifth and thirty-fifth year, and when genuine, they are observed to be especially prominent only in persons of a high order of intelligence and possessing a quick perception. And though not invariably specially large, I have always noted them in autodidacts, in whom earlier education had been neglected, but who finally overcame all obstacles and acquired considerable learning, principally from books.

Further discussion would lead us too far, but we may say that slight alterations in the gyri of the frontal lobes, whether in the upper gray layers of cells or in those lower down, nearer the white matter, a very little pressure upon them, or some immovable resistance offered to their development, will often produce serious consequences in that quarter and create mental disturbances. The following case gave rise to these reflections.

Robert B., fourteen years old, was brought to my clinic May 25, 1891. The family history showed no taint, and no organic disease existed. The boy was healthy and vigorous and mentally bright until his sixth year, when he was seized with convulsions. There was no gradual transition from *petit* to *haut mal*. Without any discoverable cause, the attacks began one day at the period of his life referred to, and have since never ceased for any length of time. Sometimes they were milder, *i. e.*, the clonic spasms were not so severe; at other times the seizures were very violent. While he had met with a number of accidents, due to the fits, and while his head and face showed many a scar, old and recent, deep and superficial, the many injuries he received had no causal connection with his disease, which preceded all accidents.

He first had only one attack in two weeks, then one a week, then several in that time, then one daily, and finally from four to ten every day; occasionally many more, as many as twenty-one in the twenty-four hours, and especially during the last two years they had greatly increased in severity and also occurred with frequency during sleep.

The starting movement, simultaneously with the suddenly developing unconsciousness, generally consisted in an extreme rigidity of both arms, which were forcibly extended and stretched out in front of him. Sometimes one arm first became stiff, the next time the other, but there was no regularity in this, the right and left arm changing about in the most hap-hazard manner. The hands were mostly clinched, but now and then the fingers were extended and as rigid as the arms. The movements, however, invariably commenced in the upper extremities, and their sudden rigidity always ushered in the seizure, which otherwise did not differ from ordinary violent attacks of *epilepsia gravior*.

But the most interesting point in the case was the following: Statistics have shown that one-half of all epileptics enjoy the best of health and are remarkable for their bright intellect.[1] Because of the frequency with which even Herculean build and unimpaired mental faculties are found to be associated with the severest forms of *grand mal*, the disease *eo ipso* is not looked upon as a destroyer of memory, an impairer of intellect, and an underminer of physical vigor. On the contrary, when such disturbances occur in the course of the "falling sickness" they are to be ascribed to other factors. The same lesion that causes *petit* or *haut mal* may also be responsible for the complications of epilepsy. And we may make this statement, as im-

[1] Nothnagel, art. "Epilepsy," in Ziemssen's Cyclopedia, vol. xiv, p. 253 et seq.

portant from a diagnostic standpoint: If the symptoms (loss of memory, slow perception, retarded mental development, idiocy, dementia, failing health, general debility, etc.) accompany the epileptic malady from its commencement and slowly become more and more apparent, they are complications, and one pathogenic cause produces both; but if these phenomena show themselves only after the "falling sickness" has lasted some time, they are sequelæ and due to the epilepsy.

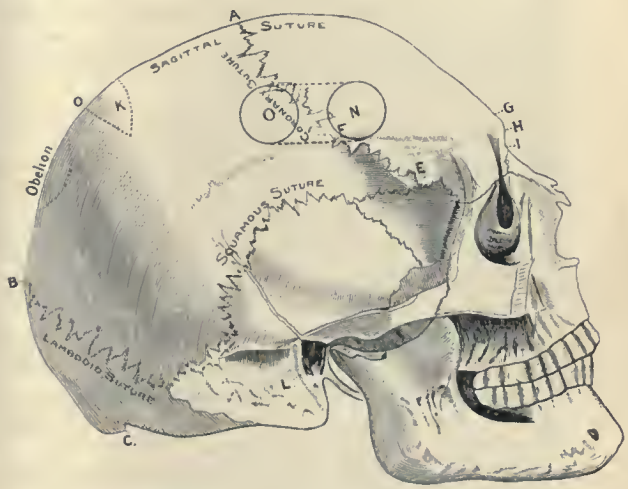
Until the time of the commencement of the convulsions Robert's intellect was of a higher order than is usually met with in children of his class—his father being a laborer. But with the occurrence of the convulsions a great change began simultaneously in the mental sphere. He became dull and vicious, and long before the fits had become very severe and numerous his intellect was clouded, until he finally seemed simple and almost idiotic, and at times became maniacal.

When I first saw him the expression of his face denoted imbecility and low cunning; a vulgar leer was in his eyes, which otherwise always looked at the ground as if dreading punishment; he glanced in a peculiarly shy manner at everyone; the movements of his facial muscles were heavy, sluggish, and vulgar in the extreme. Several times in a day he broke out into a kind of maniacal behavior, when he used the vilest language, destroyed articles of furniture, and hit his mother. Upon being remonstrated with he put out his tongue and acted like a hardened criminal. There always was a sinister expression of the face; his walk was heavy and clumsy, like that of a big man, qualities which characterized also his speech.

One glance by a careful observer sufficed to recognize a peculiar conformation of his skull. It seemed as if the latter, at the upper central part of the frontal and the upper anterior third of each parietal bone, while soft, had been crushed in by some weight, and as if the same force had pressed the two parietal bones in front closer together—this changed formation of the skull continuing until ossification had been complete. The skull, besides, was also far more massive than, considering the age of the boy, it should have been. I have never seen a case that thus impressed me with the fact that a premature closure of the anterior fontanel, a too rapid bony union at the sagittal and coronary sutures, and a too early and too rapid morbid formation of the bone had prevented the normal development—the expansion—of the cortical layers of the anterior lobes and of the upper and anterior portion of the parietal lobes, as happened in this boy's case. The mental development had been arrested and had been forced to sink below the usual level of that met with in the human being at the age of eight years—the boy then being fourteen.

Excepting his being endowed with speech—and of this he made, as indicated, but a clumsy use, so that it sounded more like a grunting, and wanted all modulations of voice and accent, often resembling the snapping and growling of an angry animal—he seemed to be a savage young monkey rather than a boy.

Under a systematic use of the bromides the convulsions greatly diminished in severity and frequency, without there being the slightest change noticeable in the mental sphere. Though we had no hope of improving the epilepsy, Dr. John H. Packard, whom I consulted because of his great experience in all kinds of injuries and operations concerning the skull, agreed with me that the bony impediment to the expansion of the brain should be removed, and as most cases in which both sides of the skull had been operated upon at once had terminated fatally, we concluded to resect first on one, and at a later time on the other side.



A. Bregma, where coronary meets sagittal suture.
B. Lambda, where lambdoid meets sagittal suture.
C. Inion, most prominent point at base of occipital bone.
D. A point half an inch behind the center of line drawn from H to I; an angle (K) of 69° to 70°, one leg of which is formed by the sagittal suture, drawn from D, will have its other leg pass in the direction of the fissure of Rolando, directly beneath it.
E. Oterion, point of crossing of coronary and squamous sutures.
F. Stephanion, point of crossing of coronary suture and temporal ridge.
G. Opbrion.
H. Glabella.
I. Nasion.
K. Angle of 69° to 70°, referred to at D.
L. Meatus auditorius externus.
O—N. Piece of skull resected.

Both operations were performed at St. Joseph's Hospital (the first August 10, 1891, and the second November 17, 1891) by Dr. John H. Packard, assisted by the resident physicians, Drs. José Samaniego and W. R. Parker. The accompanying drawings will show the pieces of bone, O—N, removed on each side. The bone was more than twice as thick as it should have been and of a calcareous nature; there seemed but little animal tissue in it. To the touch it gave the feeling as of hardened mortar to which much chalk had been added, and of the smooth, hard laminæ there was no trace.

Drs. Parker and Samaniego made the following report, which though condensed to elucidate only the important data, yet shows the progress of the case after the operations:

When Robert B. entered, August 3, 1891, the hospital, he was very unmanageable, having to be carried to the ward and made to stay there by the employment of force and of the most vigorous measures. His language and actions toward his parents and attendants were shocking in the extreme. During the weeks preceding the first operation he had many attacks a day, five of which always were very severe, *lasting from thirty to sixty* minutes. The wounds after both operations remained perfectly aseptic, and the patient each time made a rapid recovery. For five weeks after the first and for two weeks after the second operation he had no attacks; after that he had one a day—at present about two per week—but far milder than the former seizures, consisting only of loss of consciousness, with slight twitchings instead of the terrible clonic spasms that previously occurred.

One peculiar observation was made: While *before* the operation the boy, at the beginning of an attack, was always thrown *forward* with great force—to which the many scars testified; *after* the operation, he invariably fell *backward* and the violent force ceased; he rather glided to the floor instead of being hurled forward.

The temperature after both operations never went above 100°.

We now come to the main point, the result of the operations as regards mental improvement. As the consequences of the first operation were the same as those of the second, only less marked, we will note the effects of both as a whole.

We may truly state that the result was remarkable, and exceeded our most sanguine hopes. From an idiotic, sulking, and savage individual, given to maniacal outbreaks and evidently utterly wanting in all finer feelings, Robert changed to a bright, lively, and good-natured boy, with eyes beaming with pleasure and gratitude. What first attracted attention, and was especially noticeable a few weeks after the second resection of bone, was the complete disappearance of the constant frown and of the scowl that had been habitual with him, and the frank and open look with which he greeted his physicians. There now was a smile on his face; he no longer had his sight riveted to the floor when questioned, but directed it straight at the speaker, and his eyes wore a happy expression. All his former irritability and morose temper had vanished as if by magic; every act of his evinced good-nature, and he enjoyed a joke and himself tried to practise one on others, instead of being bent only on mischief and endeavoring only to injure others. When the hand was offered him he shook it heartily, while formerly he did not seem to comprehend what hand-shaking meant. To all inquiries he made intelligent replies, and it was plainly to be noticed that he tried his best to please; one could observe his earnest efforts to describe his symptoms, while before the operation his custom had been to sulk, so that no information whatever could be gleaned from him.

I have mentioned his peculiar, clumsy walk, which resembled more the step of a young elephant than that of a boy. The first time that I saw him in the hospital out of bed, about three weeks after the second operation, he was just running up a flight of stairs, skipping two or three at each jump, and he appeared as active and agile as any other lively boy at his age, and to enjoy life just as much, while previously his very existence seemed to be a burden to him.

Of great importance was this observation. While he had become bright and intelligent, the very opposite of what had once characterized him, his gaiety, the plays and occupations he liked best, belonged more to a boy six years his junior. In reporting his general mental state, while attending him at the clinic, I took occasion to note that his actions were those of a man forty years old; after the obstacle to the expansion of the gray cortical tissue of the brain had been removed, all heaviness and clumsiness seemed to cease at once as if by a miracle; every motion, the play of his features included, became active and quick, but his whole behavior was that of a boy eight years old—as if the brain had been able to develop up to that age and had then remained stationary under a cloud, as it were, until with the removal of the impediment the brain again began to make further progress, starting where it had left off. He now expressed a wish to go to school, while previously the family could not force him to go thither. His perception quickened, and, in a few words, it was the greatest change that I have ever known to occur in the mental state of any individual, and not only the most marked but also the most sudden.

The convulsions he now has, reduced under treatment with argenti nitras to from one to two a week —some weeks of late none—are almost of the nature of *petit mal;* there is no longer any force in the seizures, and a few twitchings constitute the whole clonic element of the attack, while the tonic rigidity formerly present is completely absent.

If the cases are carefully selected a wide field is opened to cerebral surgery. But we should cease trephining unless—(1) there is evidence of depressed bone as the consequence of an injury, or (2) there is malformation, or (3) there is proof of too early ossification. In other words, unless we know that the pressure of the bony enclosure causes the epileptoid seizures, trephining and linear craniotomy (two trephine openings and the removal of the intervening piece of bone or resection of a part of the skull performed in no matter what way) should not be resorted to. We may also call attention to the fact that after such an operation the fits are likely to remain away for from one to six weeks, when they will return, and that this happens even in cases in which linear craniotomy was not indicated at all and is bound to prove useless. Such cases ought, therefore, not to be reported until several months have passed by after the operation. In most cases, besides the resection, the cortical layers responsible for the attacks must be cut away—a very difficult procedure, because of the great skill and experience (and these often do not

suffice) needed to exactly locate the seat of the irritating focus. There also is a great difference, as concerns the danger of the operation, between simple resection of bone and penetrating through the dura into the cavity of the skull.

A careful search for lesions, as in Robert B.'s case, should always be instituted when the mental impairment began simultaneously with the outbreak of the epileptic disease, when we have evidence, therefore, that the same morbid cause within the encephalon is responsible for the deterioration of the intellect and for the convulsive seizures. And this happens most frequently in cases of microcephalus due to the narrow limits of the cavity of the skull, in which the brain needs more space for its normal development.

THE MECHANISM OF IMMUNITY, WITH ITS CLINICAL LESSONS.

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In The Medical News of February 2, 1889, in discussing the immunity conferred by an attack of a self-limited parasitic disease, I said: "It occurs to me that *the causes* which give to these diseases the characteristic of self-limitation and check their progress must be the same that give the after-immunity. . . . . These self-limited diseases are therefore terminated by the acquisition of a temporary immunity on the part of the patient, which continues for a longer or shorter time protecting him against future attacks." Dr. Charles Bouchard, in a paper read before the Tenth Internal Med. Congress, Berlin, 1890, gave expression to the same idea in almost the same words. He said, "The cure is the first manifestation of the acquired immunity." If this proposition, which seems almost axiomatic, be true, then it follows that all self-limited parasitic diseases confer immunity, and conversely, parasitic diseases not self-limited do not confer immunity. This conclusion is a portion of the *Law of Immunity* that I published[1] in 1889. This law, I yet believe, in the light of recent investigations, approaches as near the truth as any condensed statement at present can. It is as follows: "All self-limited parasitic diseases confer immunity, and the completeness and the length of the period of the immunity will be in direct proportion to the severity of the constitutional symptoms of the attack which conferred the immunity." I was led to formulate this law by the study of two self-limited diseases, which were thought by many able clinicians to give predisposition to, rather than immunity from future attacks, viz., erysipelas and diphtheria. In the papers referred to I have given a portion of the evidence and argument that convinced me that both of these diseases conform with the law mentioned.

The idea, as expressed in the law, is that a severe attack of a self-limited parasitic disease gives at least complete temporary immunity, but it does not fix the time that this acquired immunity may last; this period varies greatly in different diseases and is not subject to any general law. As to period, the law only comprehends the idea that the complete temporary immunity resulting from a severe attack of any of the self-limited parasitic diseases remains a complete protection for a longer or shorter time and after this affords a partial protection till the cause of the immunity has entirely disappeared, when the animal is again as susceptible to the disease as it was before the attack. The protection afforded by acquired immunity, after the period of complete immunity has passed, may be likened to a cone—this cone of immunity tapering to a point as time goes on; when the point is reached no protection remains, but previously to this the animal was partially protected and susceptible to milder attacks of the disease, the severity of these modified attacks depending on the size of the cone of immunity at the date of the attack—or in other words, on the nearness of the second attack to the attack that conferred the immunity. The further removed the second attack is from the first, the more severe it will be, that is within the limits of the immunity-period. After this period has expired, time does not increase the severity of the second attack.

This law, I think, will be of value as a working hypothesis in the field of experimental clinical medicine. But that we may understand the application of the principles underlying this law to the study of clinical medicine, it will first be necessary for us to inquire more closely into the nature of parasitic diseases, and *the causes* that give to them the characteristic of self-limitation.

At present, it is everywhere believed that in all parasitic diseases there is an antagonism between the parasites and the cells of the animal attacked, and that this warfare between the cells and the parasites and the resulting changes caused thereby represent the essential pathologic process in all mycotic diseases.

In the publication of 1889, referred to, I expressed the opinion that this contest was an extra-cellular one, and I then offered the following modification of the Metschnikoff theory as the best explanation of the nature of this process.

1. There is an uncompromising warfare waged by the cellular elements of the body against the invading bacteria.

2. The destructive influence of the bacteria is

[1] Cincinnati Lancet and Clinic, April 29, 1889, p. 630.

exerted chiefly if not exclusively through the agency of chemical poisons.

3. The cells in like manner exert their destructive influence through the agency of chemical products that are formed by reason of the increased biologic activity of the cells. This function of the cells is called into activity by the action upon them of the chemical products produced by the bacteria—a function called forth in self-defence.

4. This contest between bacteria and cells occurs *outside* and not inside the protoplasm of the cells.

5. When the cells, through the agency of chemical poisons, kill the bacteria, the "phagocytes" dispose of the dead. When the bacteria, by chemical products, destroy the cells, the former likewise feast upon the dead cells.

The foregoing theory, which I expressed three years ago, is in accord with the recent brilliant experimental work[1] that has added so much to our knowledge of the parasitic diseases. And in the argument that follows I have assumed that this theory comprehends the important principles underlying our present knowledge of these diseases.

In the study of acquired immunity we are interested in this intercellular contest only when the victory is obtained by the cells. The pathogenic bacteria gain entrance into the body and not only live there but also do more or less harm with the special poisons that they produce in the struggle with the cells for existence. The cells, on their part, are making every effort to destroy or render harmless the intruding bacteria. This they do by producing chemical substances, which have a destructive influence on either the bacteria or their products. This contest between cells and bacteria is one that knows no truce. It is a war of extermination. Both use similar weapons, viz., chemical substances, which are produced for the occasion. After a time the cells obtain the advantage, and the bacteria and their products are destroyed. This victory is by reason of the fact that the cells are able to secrete a substance that is more detrimental to the life and functions of the bacteria, than is the substance secreted by the bacteria to the life and function of the cells. With the victory of the cells the disease subsides and immunity begins. Upon what does this cure of the disease and the after-immunity depend? The answer is plain: Upon the superior functional activity of the cells. The cells in this contest have acquired a certain impressibility, a power to act and readiness for action, which enables them to respond so quickly and energetically that they can protect themselves against future attacks of the same bacteria. Or, as I expressed it in the article referred to, acquired immunity is due to a cell-function acquired during the intercellular contest between the cells and the invading bacteria.

While this increased cell-function is the prime factor in conferring on the animal immunity from subsequent attacks of the same disease, we must not fail to note the influence that chemical substances, retained in the body of an animal after an attack, may have in contributing to this result.

It is a fact well established by experimental research, that after certain of the acute infections[1] the body of the animal contains chemical substances that did not previously exist there, and which not only have the property of conferring immunity upon the animal in which they were developed, but also have a curative influence when injected into the body of another animal sick of the same disease. Not alone from these experiments, but from *à priori* facts, we conclude that after an attack of any of the self-limited parasitic diseases the body of the animal must contain a certain quantity of the chemical substance with which Nature (the cells) cured the disease, and this substance being present in a sufficient quantity to terminate the disease must be present in sufficient quantity to give present immunity. Retained chemical substances,[2] therefore, may confer immunity, but the immunity resulting from this cause will be more or less temporary, and will gradually disappear with the elimination of the chemical substances conferring the immunity, thus leaving the animal dependent on the cell-function spoken of for protection against future attacks of these diseases.

It is probable that this cell-function is called into action chiefly at the time when the tissues of the body are invaded by pathogenic bacteria, but it is also possible that under certain conditions, which we do not understand, this cell-function may be constantly exercised, producing the chemical germicides as rapidly as they are eliminated. The fact that the serum of the blood of certain animals that are naturally immune to a certain disease (for example, the rat to anthrax) has a bactericidal action on the germ of that disease, lends color to the belief that at least in natural immunity the cells of some animals may be constantly secreting the destroying germicide.

In order to avoid confusion and to better understand the relative importance of the two factors, cell-function and retained chemicals, which are

[1] For a review of this work the reader is referred to the paper of A. C. Abbott in THE MEDICAL NEWS, Nov. 7, 1891. Previously to the publication of Abbott's paper I had incorporated in this communication quotations from and references to recent experimental work that testify to the truth of this theory, but now in the interest of brevity and thoroughness I refer the reader to the paper referred to.

[1] See Abbott's paper, previously referred to.

[2] These substances act not alone as germicides, but also act by destroying the poisons produced by the "germs."

chiefly concerned in acquired immunity, we will study the question first in the general and then in the local parasitic diseases.

By *general parasitic diseases* we mean diseases such as tuberculosis, typhoid fever, measles, small-pox, etc., in which the bacteria causing the disease are not confined to any one part of the body, but are more or less generally distributed throughout the blood and tissues of the animal. Here the intercellular contest is a general one, and the cells in all parts of the body have their functional fighting-capacity alike developed. In this class of diseases the cell-function is the important factor in the after-immunity. The retained chemical germicides that are left in the body of the animal after an attack of the disease may of themselves be sufficient to explain complete temporary immunity, for a short time after the attack. But these substances will be gradually eliminated, and with their elimination the immunity that they confer will disappear. This will leave the animal in a comparatively short time protected against the disease *only* by the increased cell-function. The immunity resulting from this cell-function is more or less permanent, and is probably in some instances (in which one or both parents are immune) transmitted to the offspring. In this way, by natural selection, we may explain the origin of natural or inherited immunity. If immunity is, as we believe, dependent on the development of the functional fighting-capacity of the cells, then it would appear that a mild attack of one of the infections might only partially develop the cell-function, and therefore confer only partial immunity, leaving the animal yet susceptible to mild attacks of the same disease. Even though this be true, it would not follow that mild attacks of the acute infections always confer only partial immunity. This would follow if the difference in the severity of the attacks of these diseases always depended on a difference in the virulence of the contagion causing the disease; then the microbe with weak functional capacity for producing chemical poisons would be so easily destroyed by the cells that the cell-function of producing chemical germicides would be but feebly developed, and the animal, therefore, only partially protected against more virulent forms of the same disease. Protective inoculation with attenuated virus can, therefore, only give a partial protection against the more virulent forms of the same virus. This proposition, which is a logical conclusion from the foregoing argument, is amply supported by experimental investigation, which has shown that virus of increasing potencies must be injected into the body of an animal to confer complete immunity.

But, in the study of this difficult subject, we must remember that mild attacks are not always due to an attenuated virus. They are, probably, more often due to a partial natural immunity dependent on an inherited or natural cell-function that enables the cells very quickly to terminate the disease. The susceptibility of different animals to disease, therefore, depends on the degree of this inherited cell-function. If the function is highly developed, the animal is immune; if feebly developed, the animal is very susceptible to the disease. A mild attack of one of the acute infections may increase the development of this cell-function to such a degree as to give complete immunity. For this reason, when mild attacks are due to a lessened susceptibility, and not to a weakened virus, they may confer complete immunity. But the completeness of the immunity resulting in animals of like susceptibility, will be in direct proportion to the severity of the constitutional symptoms of the attack that conferred the immunity.

In the *local parasitic diseases* the mechanism of immunity is not altogether the same as in the general parasitic diseases. By local parasitic diseases we mean such diseases as erysipelas, diphtheria, and pneumonia. The bacteria causing diseases of this class are not generally distributed through the blood and tissues of the animal, but are confined to one or more parts of the body, where they produce their characteristic poisons, which are carried by the bloodvessels and lymphatics to all parts of the body, in this way producing constitutional symptoms. Local parasitic diseases are self-limited, but not in the same sense that constitutional parasitic diseases are limited. For example, the life of the diphtheritic inflammation is about three or four days; after this time the membrane is dead, and the disease has terminated at that point; but it may spread to other points, as from tonsil to tonsil, and then to pharynx, nose, or larynx, in this way continuing the disease indefinitely. But it, nevertheless, has a definite course, and confers on the mucous membrane involved at least temporary immunity.

The intercellular contest in local diseases is confined more or less to the part affected. Cells in distant parts of the body are not stimulated to the same functional activity as are the cells of the part affected, and, therefore, do not acquire the same power to resist future attacks of the same bacteria as do the cells at the site of the contest. In such a contest only a small minority of the cells of the body have their functional fighting-capacity fully developed, and these are the cells that take part in the hand-to-hand conflict. The cells in other parts of the body have this function much more feebly developed. We have, therefore, a few cells that have the power of conferring complete, and a great many cells that have the power of conferring

partial immunity. This would all be very well if the cells conferring complete immunity always stood guard at the portals through which the germs usually enter, but such is not the case. The cells taking the most active part in the contest are phagocytes. These cells, after the fight is over, find their way through the lymphatics and bloodvessels to all parts of the body, thus leaving the animal, as far as the functional fighting-capacity of the cell is concerned, only partially protected. But the other factor, viz., retained chemical products, is, in the local diseases, of prime importance. After the conflict is over, the body must contain a considerable quantity of the chemical substance manufactured by the cells for destroying the bacteria, and the amount of this substance present would depend on the severity of the constitutional symptoms of the attack in which it was produced. A local disease, with severe constitutional symptoms, might, therefore, leave the body so saturated with the proper chemical germicide as to give complete immunity. The completeness of the immunity will here again be in direct proportion to the constitutional symptoms of the attack that conferred it.

It is evident that immunity conferred in this way will slowly disappear with the elimination of the chemical substances on which it depends, until after a time there remains only the partial protection afforded by the feebly developed cell-function described. But the protection afforded by this partially developed cell-function will probably explain why second and third attacks of the local parasitic diseases are usually less severe than the primary attack, even though a long interval of time has intervened.

In this paper I have tried to give my reasons for believing the following propositions:

1. All self-limited parasitic diseases confer immunity.

2. In the local parasitic diseases, the completeness of the immunity, and the length of the period of immunity, will be in direct proportion to the severity of the constitutional symptoms of the attack that conferred the immunity. In this class of diseases, retained chemical products produced by the cells are the chief factors in conferring the immunity.

3. In the general parasitic diseases *in animals of like susceptibility*, the completeness of the immunity and the length of the period of immunity will be in direct proportion to the severity of the attack that conferred the immunity. In this class of diseases, acquired cell-function is the chief factor in conferring the immunity. Immunity from this cause is more or less lasting.

If the mechanism of immunity as here presented be correct, we have an insight into the method by which Nature cures and protects from future attacks of the parasitic diseases. In imitating Nature, experimental clinical medicine has a promising field opened for original work.

In the cure and prevention of disease the experimenter may use one of two substances:

1. The chemical substances produced by the cells.

2. The chemical substances produced by the bacteria.

Let us first note what results we may expect from the use of the chemical substances produced by the cells in curing the disease.

(*a*) By injecting these substances in sufficient quantity into the body of a healthy animal we would expect to confer complete temporary immunity to the particular bacterium that induced its formation. But this immunity would gradually disappear with the excretion of the cause on which it depended.

(*b*) By injecting this substance in sufficient quantities into the body of an animal sick of the disease, we would expect it to act as a true specific in the cure of the disease.

If, therefore, we could obtain these various chemical substances with which Nature cures the self-limited diseases, and with which she confers a temporary immunity against them, we would have the means not only of curing, but of preventing these diseases. These conclusions as to the therapeutic value of the chemical substances left in the body of an animal after an attack of a self-limited disease are logical inferences from the theory of immunity as presented; and the fact that these conclusions are proved to be true by the recent experiments of Emmerich, and Behring and Kitasato, is strong testimony to the accuracy of the theory that gave origin to these conclusions.

In the second place, let us note what beneficial results may be expected from the introduction of the products of the bacteria. As we have said, it matters not, so far as this argument is concerned, whether these substances act directly as chemical poisons or indirectly as enzymes producing toxalbumins. In either case it is clear that they can have no directly curative result in an animal sick of the disease; nor can they have any direct action in conferring immunity when injected into healthy animals. Whatever action they may have in either instance must, in accordance with the theory outlined, be an indirect one, and dependent on the power that these substances have of exciting the cells to the production of the substances that either destroy bacteria or neutralize their products, and thus terminate the disease and confer immunity. The disease is here terminated, and immunity conferred, not by the products of the bacteria, but by the products of the cells, in the same manner as when the cellular, instead of the bacterial, products were

introduced. The only difference is that, in the first instance, the cellular products are formed in the body of one animal, and introduced as a curative or prophylactic agent into the body of another animal, and whatever action they may have would disappear with their elimination. In the second instance, the cellular products are formed in the body of the animal experimented on, and by reason of this fact the animal would have this cell-function more fully developed. This, as we have already explained, would confer a more lasting immunity. By the injection of bacterial products in animals capable of resisting the disease, we may, therefore, expect to confer a more or less lasting immunity.

What may we expect from bacterial products as curative agents? From what has been said it is evident that bacterial products can in no sense be considered as curative agents. They are the cause of the disease, and not of the cure. While this is true, it may also be true that the presence of a large quantity of bacterial products in the body of an animal may cause the cells of that animal the more quickly to produce the counteracting cellular products that terminate the disease and confer immunity. We may, therefore, hope to hasten the termination of a *self-limited* disease by the careful injection of the bacterial products of that disease. But it is a nice question whether this is ever justifiable, even in the treatment of self-limited diseases.

In such diseases, by introducing the chemical weapons that are being used by the bacteria in their fight, we hope the more quickly to stimulate the cells to the production of the proper substances in sufficient quantity to more rapidly terminate the disease. In this method there is the evident danger of introducing too great a quantity of the bacterial products. Should we do this, instead of stimulating the cells to activity, we would paralyze their function and give the victory to the bacteria.

By injecting bacterial products, even in the self-limited diseases, we sacrifice the certainty to the rapidity of the cure. And in diseases *not* self-limited we hasten the fatal termination of the disease.

To show that the foregoing theoretic considerations have an important practical bearing, before closing my paper let me note the fact that they offer a most satisfactory explanation of the variable results that have been obtained by the treatment of tuberculosis with tuberculin, and that they may assist us in selecting the proper cases for this treatment.

Tuberculosis is in many instances, with good food and hygiene, and under favorable climatic surroundings, a self-limited disease, and it is only in such cases that the use of tuberculin would be permissible. Here, while it would have no direct curative effect on the disease, it would hasten the process by which Nature cures the disease. But in cases *not* self-limited it can only hasten the process that brings a fatal termination. The responsibility of using tuberculin is, therefore, a very great one, since the agent should never be used unless we are quite sure, from the family history, the general condition of the patient, and his hygienic and climatic surroundings, that the disease in this particular instance will be self-limited.

THE USES OF FEVER. THE DANGERS OF ANTIPYRETICS IN TYPHOID FEVER.[1]

By J. H. MUSSER, M.D.,
of Philadelphia.

Animal heat serves a physiologic purpose in the economy. When this degree of heat is beyond the limits of the norm its purposes are not physiologic. In health, normal heat is a stimulus essential to the carrying on of physiologic processes. Without it the nerve-centers controlling respiration, circulation, and other processes are dormant. No stretching of the imagination is necessary to conceive of such an impairment of the vital forces in consequence of which increased heat or fever is essential as a stimulus to enfeebled nerve-centers.

The following observation impressed the writer with the use of fever as a vital stimulant:

The patient, two years old, was ill of whooping-cough and its graver pulmonary complications—capillary bronchitis and atelectasis. Exhaustion was extreme, on account of her long illness of three months. Fever was marked. During the last week of her illness death was daily, then hourly expected. The hands and feet became cold, the face pale, the respirations excessively rapid and feeble (from 100 to 110), the pulse feeble and irregular and so rapid that it scarcely could be counted; a cold sweat bathed the brow, while stupor was present. These grave symptoms were first observed in the mornings. The temperature ranged between 100° and 101° at this time. As the day advanced, the usual afternoon exacerbation of fever took place. With such degree of heat came evidences of renewed strength. The extremities warmed, the color brightened, the respirations were less labored, the pulse became perceptibly stronger and fuller and more regular; intelligence was restored; though refused before, food was now taken with avidity, and even asked for, and notice taken of objects and events. Hope was restored, to fall again with each degree of decline of the thermometer.

These paroxysms of heat-exacerbation and stimulation at first took place daily. On the last three days of the child's illness, as recorded by the thermometer, they took place every two or three hours. Indeed, during the period of lowered temperature, so depressed and feeble was the child that death was momentarily looked for. As the temperature rose—but not until it was above normal for some time—the grave symptoms disappeared. These hourly

[1] Read before the College of Physicians, February 3, 1892.

heat-paroxysms were closely watched, and to no other cause than the stimulus of heat could the revivals of strength and increased functional activity of the circulatory and respiratory apparatus be attributed. It was difficult to picture, and was certainly a most striking exhibition of the play of heat-centers in the phenomena of life. Finally, the heat-centers did not respond to the unknown stimuli, after the stage of exhaustion they had undergone, the temperature did not rise, and gradually all function ceased.

I wished more particularly to place this observation on record in order that we should bear in mind in these times, when so much is said about the use of antipyretics, the dangers of fever, and the necessity of reducing temperature, that at certain times high temperature may have a physiologic use in the economy. I am well aware that certain German and French writers have held that high temperature is a conservative process, particularly in septic conditions, through its effect upon the bacteria or the poisons generated by them. But, independently of this action, fever serves quite a physiologic use in the economy. This is the only observation that I wish to record in regard to the use of fever.

The following remarks are addressed to practitioners who continue to use, and think they must use, antipyretic medicines, because the thermometer records high temperatures. I have never used such means to reduce temperature in typhoid fever, but I wish to particularly impress upon those who will use antifebrile drugs that it is at times essential they should withhold their hands. The present intemperance in the use of antipyretics is due to laudation in the past of this class of drugs by eminent therapeutists.

Now, in regard to the danger of the use of antipyretics in certain cases of typhoid fever. There are three periods in the course of typhoid fever when, without doubt, the use of antipyretics is dangerous, and these must be carefully considered: First, in the early or middle period of cases that come to us after removal from a distance. Sir William Jenner was the first to lay great stress upon the danger of the removal of a patient suffering with typhoid fever. Anyone that observes cases in the medical ward of a hospital will notice that the temperature for the first twenty-four hours after admission is unusually high—that is, higher than one would expect at the period that the disease has reached. This rise of temperature is undoubtedly due to the exhaustion that has taken place on account of the removal to the institution. I have seen this so often and made so many observations in connection with it that I hesitate to use any antipyretic during the first twenty-four hours after admission. The records that I have bear out the correctness of this course. Even if no antipyretic is given, the temperature usually falls to the proper point in twenty-four hours. Sometimes stimulants are required, and under their use the temperature falls. On the other hand, I have seen cases admitted with a temperature of 105° or 105.5°, in which an antipyretic was given with serious results. I am so sure of the inadvisability of administering an antipyretic under these circumstances that I direct that no antipyretic be given during the first twenty-four hours after admission, but that stimulants shall be administered.

Again, there are certain cases in which peculiar idiosyncrasies exist, in which it is inadmissible to use antipyretics during the course of typhoid fever, no matter how high the temperature may be, if life is not threatened. I remember one such case among a number of others. We have all seen patients that were particularly susceptible to drugs, to the application of external cold, to any kind of stimulant, and to opiates or alcohol in any form. The case that I have in mind is that of a young woman who was in the private ward of the Presbyterian Hospital, with typhoid fever running a regular course, but with excessively high temperature. It was impossible to administer any antipyretic. She was extraordinarily susceptible to quinine, one grain producing serious nervous symptoms. The use of alcohol caused increased headache and violent nervous symptoms. The external application of cold and the external use of alcohol or other refrigerants produced shivering and great depression. Without my concurrence, five grains of antipyrin on one occasion were administered with such serious collapse that for five hours it required the efforts of three of the *internes* to restore the patient to her natural temperature, and, in fact, to save her life. It was the most extraordinary degree of depression that I have seen from a single administration of the drug. This is an example of a number of cases in which it is impossible to administer antipyretics, as a result of peculiarities of individual constitution. I think that physicians who are constantly calling attention to the use of antipyretics neglect to look for these peculiarities, which I think are present in many cases. I have now under observation an individual of highly nervous temperament, to whom I would not administer an antipyretic unless life was absolutely threatened.

It is in the latter stages of typhoid fever that I think antipyretics are especially dangerous, and must be administered with the greatest care. Two classes of such cases are worthy of attention. There is one class in which the temperature persistently remains at the maximum, but there is abatement of all of the other symptoms—lessening of the diarrhea, cleaning of the tongue, diminution of the delirium, and even lowering of the pulse, with in-

crease of strength. We feel that the typhoid process is ended, but the fever, nevertheless, continues high. I will illustrate this with brief reports of two cases:

In the first case, in a lad ten years of age, whom I attended during the course of an attack of typhoid fever, from the fifteenth to the eighteenth day of the disease the temperature ranged between 104° and 105.5°. The tongue had cleaned, the number of stools had lessened and these were gradually becoming formed, and I felt that the pathologic process was at an end, and that if we waited a little while the fever would probably subside. There were no dangerous symptoms except the high fever. At 10 o'clock on the evening of the eighteenth day the temperature was 105°; it then began to fall until, at 6 o'clock in the morning, it was just below 96°; it required all the efforts of the father and the nurse to prevent what they thought to be a fatal collapse. The temperature remained below 96° for an hour, then began to rise, and by 9 o'clock in the evening it was 104°. It remained at about this point for two hours, and then gradually fell until in the morning it was 96.5°. It then rose again, to be followed by another fall, but not to such a low point. There is no way in which this fall in temperature could have been anticipated. If we had applied external cold or administered an internal antipyretic, I am quite sure that the collapse that occurred naturally would have been a fatal one. This sudden fall often occurs in typhoid fever in children, and it is one of the ways in which the fever subsides, the disease terminating by crisis.

In the second case—that of a young man, seventeen years of age, who was treated in the private wards of the University Hospital a year ago, and who had a prolonged and severe attack of typhoid fever, the temperature keeping high—without warning or cause a "nervous chill" occurred, followed by a fall in the temperature from 104.4° to 95.5°, the thermometer rising again to its former level. The temperature kept thus for five or six days, and then gradually fell. I know of no way in which the fall of temperature could have been anticipated. Before it occurred we were much tempted to use some active means to reduce the temperature, but, had this been done, it might have been serious for the patient.

I recently treated with turpentine, in the Presbyterian Hospital, a case of typhoid fever in a man twenty-six years of age, in whom the disease ran a perfectly normal course. While grave, the symptoms were not alarming, and the temperature ranged between 103° and 104°. At one of my visits I found a falling temperature, which continued until the mercury registered 96.5°, being followed by a gradual rise, with a subsequent decline by lysis. This is another case in which no one could have anticipated the fall of temperature, which, I am sure, was a part of the disease, and not due to any cause that would produce collapse.

These three cases are examples that I have taken at random from an abundance of typhoid fever notes, in which the administration of an antipyretic in the latter stages of the disease would have been dangerous.

Of course, there is still another class of cases in which it would be dangerous to administer an antipyretic, those, viz., to which Dr. Da Costa has particularly called attention, in which the morbid process has terminated, but—on account of the exhaustion, or the long continuance in bed, or the limited diet—the temperature keeps up, or even begins to rise. Such a case was under my care last year. These have been spoken of as cases of bed-fever, and in such instances the administration of an antipyretic would not have the desired result. In these cases the fever is due to exhaustion, lack of food, and long continuance in bed. The use of stimulants, solid food, and getting the patient out of bed, bring back the temperature to the normal.

The foregoing are the classes of cases to which I wished particularly to call attention in connection with the dangers of antipyretics in typhoid fever. The attention of the College is invited as much for criticism as for discussion, and, finally, in order to say that if physicians will give antipyretics in typhoid fever, it behooves them not to administer them in the cases or under the conditions related.

DIPHTHERIA AND ITS TREATMENT.

By ALEXANDER FULTON, M.D.,
of Philadelphia.

The coccus insect, a miniature creature, feeds particularly on one plant, the nopal; the potato-bug on the potato-vine; the rose-beetle on the rose-vine, etc. These parasites suddenly and mysteriously appear and disappear; are very destructive to the plant; only starvation will make them infest other plants; and, owing to great powers of multiplication, the means must be prompt and efficient to kill them. So it is with the diphtheritic bacterium. It has an especial affinity for the tonsils. Its presence on these organs is the local manifestation that chiefly characterizes diphtheria. If not early and thoroughly destroyed, it will multiply and extend its ravages with wonderful rapidity and injury.

The subjoined treatment is based upon this theory, and has been successful in thirty-seven consecutive cases, this number being all of the cases in which I used it. It consists in the application to the patches of a strong solution of argentic nitrate, ℈j to f℥ss of rose-water, by means of a throat-brush, so constructed that it will not break, etc. I wish to emphasize that this application must be repeated at one sitting sufficiently to remove the patches or to saturate them. Failure in this respect may cost the life of the patient.

In the early stages of the disease the patches can

almost invariably be wiped off with one sweep of the brush, which is not the case later on, when they become deeply adherent. These applications should be made twice a day, morning and night, but may be used according to the exigencies of the case, or so long as the deposits are observed, since they show a tendency to reappear. Often after one effectual cleansing of the throat in this way the patches do not return, and there is a subsidence of all of the symptoms of the disease. The agent must be kept in a blue bottle excluded from the light, and the brush or whatever instrument is used in making the application should be washed and kept in an antiseptic solution.

If practicable, the foregoing procedure should be immediately followed by a gargle, such, *e.g.*, as the following:

℞.—Tinct. kino . . . . f℥ij.
Glycerin . . . . . f℥ij.
Ol. eucalyptol . . . . gtt. x.—M.
S.—A teaspoonful in a tablespoonful of water as a gargle.

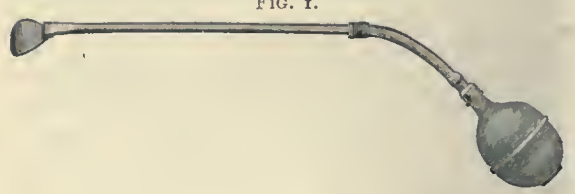
The operator may wear gloves to prevent discoloration of the hands by the silver, and the face should also be guarded from the stain.

Whether or not the gargle be used, the throat should be dusted with the following:

℞.—Hydrarg. chlor. corros. . . gr. j.
Pulv. sulphuris . . . . ℥j.—M.
S.—Blow a pinch into the throat every four hours.

For this purpose, I use an insufflator, shown in the annexed engraving. A pinch of the powder

FIG. 1.



component of the treatment is pressed into the tube as it opens above the tongue-depressor attachment. Thus charged, it is used as an ordinary tongue-depressor, when, upon the desired exposure of the part to be treated, compression of the rubber ball expels the powder in an effective and reliable manner. It may be necessary to discontinue the use of this mercurial combination in a day or two. Its administration must be under the supervision of the physician, on account of the possible systemic toxic action, although I have not experienced any such unpleasant occurrence.

In connection with this treatment I give from the commencement, according to the age of the patient:

℞.—Pulv. potas. chlorat. . . ℥ij.
Tinct. ferri chlor. . . . f℥ij.
Syr. limonis . . . . f℥iij.
Ol. gaultheriæ . . . . gtt. iij.—M.
S.—A teaspoonful every two or three hours.

I also apply externally, over the site of the tonsil:

℞.—Tinct. iodi. . . . . f℥ij.
Ol. camphorat. . . . . f℥j.—M.
S.—Apply every four hours.

This is best done by wetting a piece of flannel with the remedy and holding it in place by means of a roller bandage.

I have always found this procedure to reduce the external swelling. Care must be exercised so as not to soil the clothing.

When there is a rise of temperature, indicating the need of antipyretics, I resort to small doses of antipyrin and withhold its use upon a sufficient diminution of temperature. During convalescence I advise the use of mist. ferri et ammon. acetatis, light nutritious diet, and champagne.

Sometimes the stomach is so irritable that it rejects everything given. This condition is generally alleviated by giving the wine.

In only a few cases were there noteworthy sequelæ, from which the patients ultimately recovered.

Perhaps in my cases the reality of the disease may be doubted, but the adoption of the treatment will convince the most skeptical. However, the accompanying drawing represents the membrane as removed in almost every one of my cases.

FIG. 2.

Furthermore, albumin was almost always present in the urine. Sometimes angina coëxisted.

The mortality and gravity being large, it seems that the treatment of diphtheria may be susceptible of much improvement. Anything that has been proved useful in so large a number of cases as I report is certainly worth a trial.

Alumni Association of Jefferson Medical College.—Dr. Jerome K. Bauday, of St. Louis, will deliver the annual oration before the Alumni Association of Jefferson Medical College on Monday evening, April 25, 1892, at 8 o'clock, in the amphitheater of Jefferson Hospital, after which a dinner will be tendered him at the Hotel Stratford.

RECENT ADDITIONS TO THE MATERIA MEDICA.

By W. A. N. DORLAND, M.D.,
INSTRUCTOR IN GYNECOLOGY, PHILADELPHIA POLYCLINIC.

(Concluded from page 427.)

Methacetin, $C_6H_4.OCH_3.NH.C_2H_3O$. Para-acetanilidin or oxy-methyl-acetanilid, is a derivative of amidophenol. It occurs as a slightly reddish crystalline powder, odorless, of a faintly bitter, saline taste, soluble in warm water but less so in cold, very soluble in alcohol and glycerin, melting at 248° F. It resembles antipyrin in action, and the effects ensue rapidly on account of the drug's solubility. The fall of temperature is gradual, lasting some hours, and followed by a rise. Methacetin is best administered in pulmonary tuberculosis between three and four in the afternoon. The fall in temperature is accompanied by profuse sweating, and occasionally the drug exerts an unfavorable influence upon the heart, slight collapse following the exhibition of 7 grains. Seidler found that it acted well in acute and subacute rheumatism, mitigating the pain, fever, and swelling. It is, however, less efficacious as an antineuralgic. *Dose*—from 2 to 4 grains, exhibited with great caution. *Antipyretic, antineuralgic.*

Microcidin. Sodium naphtholate, a combination of naphthol and caustic soda, occurs as a tasteless, odorless, white powder, very soluble in water, giving in concentrated solution a brown color; it has no caustic properties and is but slightly toxic; it is antipyretic, and is excreted in large quantities by the kidneys. It is superior to phenic and boric acids as an antiseptic, but inferior to naphthol and corrosive sublimate. Solutions of from 3 to 5 : 1000 answer every purpose. Under its influence leg-ulcers and suppurating wounds cicatrize rapidly, and the odor of gangrenous wounds is quickly neutralized. For infected wounds a 5 : 1000 solution is needed, but a 3 : 1000 solution is sufficient to guard wounds from infection. Berlioz places microcidin among the best and most innocuous *antiseptics.*

Orexin, $C_{14}H_{12}N_2.HCl.2H_2O$. Phenyl-dihydro-chinolin hydrochlorate, is a yellowish-white crystalline powder with a nauseous pungent taste; insoluble in ether, soluble in water and alcohol. It has the property of stimulating the gastric secretion and thus of increasing the appetite. Penzoldt has had great success with it in anorexia not due to or complicated with gastric disease proper; it is only to be used in anorexia when this condition is a secondary symptom. He has employed it after major operations, in pulmonary tuberculosis, chlorosis, pleuritic exudations, pulmonary emphysema, heart-affections, various anemic conditions, and in defective nutrition generally. Its use is counter-indicated by the existence of any gastric disease proper (on account of its irritating action on the mucous membrane), in advanced pernicious constitutional disease, or when there is preëxisting hyperacidity due to HCl. It has given good results in chronic gastric catarrhs other than those of congestive origin and those due to alcoholism. Gordon has used it as an appetizer and stomachic in children, with satisfaction. *Dose*—from 2 to 5 grains in gelatin-coated pills, powder, or wafers during meals, with copious draughts of milk or beef-tea, to prevent any possible gastric irritation. *Stomachic.*

Ouabain, $C_{30}H_{46}O_{12}+7H_2O$, is a glucoside obtained by crystallization from a watery extract of the roots of Ouabaio, *Carissa Schimperi*, a member of the important family of apocynaceæ. It appears in rectangular scales, excessively thin and of a pearly aspect, odorless, and without appreciable bitterness; it is slightly soluble in cold, and very soluble in boiling water and moderately concentrated alcohol; insoluble in chloroform, anhydrous ether and absolute alcohol; it melts at 200° C., and is violently poisonous. It is probably homologous with strophanthin, which it closly resembles in its action, being, however, more toxic. The toxic effects are considerable slowing of the pulse and respiration, the latter of which is especially to be guarded against. It has been found very efficacious in whooping-cough. It promotes the action of the skin after three or four days' treatment, and also increases the flow of urine, and diminishes the quantity of sugar that may be present. It action is not cumulative. Applied to the eye it produces corneal anesthesia, but is inferior to cocaine. *Dose*—from $\frac{1}{2000}$ to $\frac{1}{250}$ grain given as a per mille solution; according to Gemmell, the standard dose for a child under five years is $\frac{1}{1000}$ grain every three hours in solution. *Diuretic.*

Pambotano is a Mexican plant, *Calliandra Houstoni*, belonging to the order of leguminacæ. It is a bitter of the first order, of great value in marsh fevers, typhoid fever, influenza, and tuberculosis. Usually one dose is sufficient to cure periodic attacks. *Dose*—70 grains in twenty-four hours to an adult, administered in four equal portions in hot sweetened water or tea. The preparations are the tincture, decoction, and alcoholic elixir. *Antimalarial.*

Papain is a ferment obtained from the milky juice of *Carica papaya*, a South American fruit tree of the natural order papayaceæ; it is prepared by mixing the juice with alcohol. It occurs as an amorphous yellowish-white powder, odorless, almost tasteless; soluble in water, but not in alcohol. Its composition has not yet been determined, but it contains 10.6 per cent. of nitrogen. It possesses active digestive powers, but differs from pepsin in the fact that it softens and dissolves fibrin in liquids that may be either acid, neutral, or slightly alkaline. It also acts at higher temperatures and more rapidly than pepsin. It is the best solvent known for diphtheritic membrane, and, according to Baginsky, should be dabbed on, to avoid irritation of the affected area; a 5 per cent. solution should be used for this purpose, or as a spray. The following prescription of Dr. W. C. Caldwell has obtained special popularity in diphtheria: Papain, 2 drams; hydronaphthol, 3 grains; hydrochloric acid, 15 drops; distilled water, q. s. ad 4 drams; to be applied to the membrane with a camel's-hair brush. One of the principal fields of usefulness for papain is the expulsion of intestinal parasites; it destroys or digests the parasites, after which a laxative is required to expel them. For tape-worm, from 3 to 10 grains are mixed with 4 grains of Dover's powder, and one-sixth taken night and morning. It is said to have a solvent effect when applied to indurated carcinomatous tissue, and, so used, has yielded good results in the hands of competent observers. A 5 per cent. solution with a 2½ per cent. solution of sodium bicarbonate has been recommended for cleansing the middle ear in chronic suppuration, 15 minims being

dropped into the meatus. A solution containing 12 grains of papain, 5 grains of borax, and 2 drams of water, painted on the hands twice a day will remove the warts in chronic eczema and hypertrophied conditions of the palms of the hands. A solution in glycerin is useful for ulcers and fissures of the tongue. *Dose*—from 1 to 10 grains, best administered alone. The elixir of papain may be used in dyspepsia and sea-sickness in 1 dram doses. *Digestant.*

PARACRESOTIC ACID, $C_8H_9O_3$, is prepared from paracresylol by the action of carbonic acid in the presence of sodium. It crystallizes from water in long, white, brilliant needles, slightly soluble in cold water, and more so in warm water, alcohol, ether, and chloroform; it melts at 151° F. It is employed mostly in the form of *sodium paracresotate*, $C_8H_7NaO_3$, a very fine crystalline powder, of bitter but not disagreeable or nauseating taste, soluble one part in twenty-four of water. Its action is very similar to that of sodium salicylate, and it has found special application for administration to children. It is a safe and reliable antipyretic. It is eliminated in part as pure paracresotic acid, and partly as that acid associated with gylcosuric acid. It has antiseptic properties as powerful as those of salicylic acid. Demme largely used it as an antipyretic and antizymotic in children with acute articular rheumatism, in which, though inferior to salicylic acid as an antipyretic, it did not provoke as grave troubles. It is well tolerated by the digestive organs. It exerts a favorable influence upon the course of catarrhal pneumonia. In the gastro-intestinal catarrh of nurslings it gives results analogous to those of resorcin. For this purpose Demme used the following prescription: Sodium paracresotate, from grains 1½ to 3; tincture of opium, from drops 2 to 4; cognac, minims 15; syrup of acacia, dram 1; distilled water, drams 6½. Of this a dram was given every two hours. *Dose*—from 2 to 3 grains in a one-ounce mixture, a teaspoonful of which is given every two hours (for children); larger doses (up to 2 drams of the salt) may be safely given to adults. *Antipyretic.*

PENTAL, C_5H_{10}. Trimethylethylene, produced by heating amylen hydrate in the presence of acids, is said by v. Mering to be a safe and effective anesthetic. It is a colorless liquid of low specific gravity, boiling at 100.4° F., and burning with a luminous flame; it is insoluble in water; exceedingly volatile; but does not decompose on exposure to air or light. It is readily inhaled, without affecting the membranes of the throat or air-passages. From 10 to 25 cc. suffice to anesthetize, the narcosis coming on gradually, without any preceding symptoms, without any influence on respiration or heart-action, and with no unpleasant after-effects. Although sensibility is absent, consciousness is partially preserved, and in deepest narcosis patients open the mouth and jaws when directed to do so. Awakening is quite gradual. The agent is best administered by means of Junker's inhaler, which modifies the unpleasant odor of the fluid. *Anesthetic.*

PHENOCOLL, $C_6H_4{<}^{OC_2H_5}_{NH-OC.CH_2-NH_2}$. Phenolglycocoll, or amido-acet-para-phenetidin, occurs in white, acicular crystals, with a tendency to mat themselves together; it is slightly soluble in ether, benzol, chloroform, and cold water, freely so in alcohol and warm water. *Phenocoll hydrochlorate* is a white, microcrystalline powder, soluble in sixteen parts of cold water the solution being of neutral reaction; it has an unpleasant bitter and saline taste. Phenocoll kills by an action upon the respiratory center, but does not affect the composition of the blood. Its antipyretic action is rapid and powerful, but the effect upon the temperature is of but short duration. Phenocoll is especially efficacious in fever of hectic type, and is a superior antipyretic in typhoid fever and pneumonia. It does not produce collapse or cyanosis, and gives rise to but slight sweating. It is rapidly eliminated, and seems to exert no injurious effect upon the kidneys. It is a valuable nervine, and answers well as an antirheumatic in chronic rheumatic affections, as well as in the acute affections and in sciatica; it has no effect, however, in gonorrheal rheumatism (Hertel). It has been successfully employed in influenza. In pulmonary tuberculosis, it has been used subcutaneously with advantage. *Dose*—of the hydrochlorate, from 8 to 15 grains; repeated at intervals of about one hour. It is preferably administered at bed-time, as the action of the drug is heightened during the complete rest of the night's sleep. *Antipyretic, analgesic, nervine.*

PIPERAZIN, $C_4H_{10}N_2$, is a piperidin in which the CH_2 group has been replaced by the NH. It occurs in well-defined acicular colorless crystals, readily soluble in water and strongly alkaline in solution, with no toxic properties. It is particularly designed to take the place of the lithium salts, and has proven itself of great service in the management of the uric-acid diathesis, with the formation of concretions in the kidneys. In this condition, tablespoonful doses of the ½ per cent. solution are employed; the drug hastens the elimination of the renal calculi and arrests the severe colic-like paroxysms. Undoubtedly piperazin possesses unusually great uric-acid solvent power, and its general applicability in gout, rheumatism, urinary calculus, and all diseases consequent upon the uric-acid diathesis is evident. Its great advantage over lithium is that it will form seven times more of a combined salt with the uric acid than will lithium, and the resultant piperazin urate is twelve times more soluble than the lithium urate. The following mixture has been recommended for solvent purposes: Piperazini puri, grains 15; syr. cort. aurant., drams 6; aqua destil., q. s. ad ounces 6; to be taken during the day. In lumbago, subcutaneous injections of a 2 per cent. solution were employed, with entire relief from the pain in nine or ten days; the injections themselves were quite painful, but no abscesses or unpleasant after-effects were noted. Piperazin has been used in mental troubles and in lead paralysis as a tonic and diuretic, and has been recommended in pruritus and nocturnal enuresis. *Dose*—from 5 to 8 grains several times daily, with a maximum of from 15 to 30 grains; subcutaneously, 5 grains. The best mode of administration is as follows: Dissolve 15 grains of pure piperazin in about one quart of carbonated water, and direct the patient to drink this amount in convenient doses in the day. By adding 15 grains of phenocoll hydrochlorate an additional analgesic action is secured. *Piperazin water*, thus prepared, may be bought in one quart mineral-water bottles. *Uric-acid solvent.*

PYOKTANIN, or *methyl-violet*, appears in two varieties, *blue* for surgical, and *yellow* for ophthalmic purposes. Both are made into dusting powder (2 per cent.), oint-

ment (2 per cent.), and gauze (1 : 1000). The stains produced by pyoktanin upon the skin may be removed by alcohol. Pyoktanin possesses antiseptic properties to a marked degree, and when injected into the tissues diffuses itself at once. By its action on the nuclei of cells of neoplastic growths pyoktanin renders them sterile. Professor Ceccherelli arrested the growth of an enormous sarcoma of the lower jaw by means of parenchymatous injections of from ½ to 1 dram of a 1 : 300 solution, repeated every two or three days. Pyoktanin has also been used in epithelioma of the cheek, eyelid, and breast, and Boldt asserts that good results and possible cures follow its injection in uterine carcinoma, together with 4 grain doses internally daily. Bellotti has used it with success in the form of dressings of carbolized cotton-wool, saturated with a 1 per cent. solution of pyoktanin, in a rodent ulcer of twelve years' standing. The pain that is produced when it is dusted upon carcinomatous growths may be alleviated by the use of cocaine. In a ½ per cent. solution and in pencil form it is well borne by the eye, according to Marchetti. Especially is it of service in dacryocystitis, chronic blennorrhea, extensive corneal infiltrations, hypopyon-keratitis and panophthalmia. It has also been used in suppurating affections of the nasal cavity, and in injections of 1 to from 500 to 1000 twice daily in obstinate chronic cystitis. *Dose*—from 1 to 5 grains. *Antiseptic.*

Pyridin, C_5H_5N. A liquid alkaloid obtained in the destructive distillation of bones; it is colorless and mobile, with a powerful empyreumatic odor, boiling at 242° F., having a specific gravity of 0.985, and being freely miscible with water, alcohol, ether, and chloroform. It forms crystalline salts with acids. It is employed to relieve the dyspnea of asthma, and is believed to be the active agent in the various cigarettes recommended for that purpose. The vapor of a dram inhaled two or three times a day eases respiration and soon effects a cure. Pyridin has also been used in angina pectoris and cardiac failure. *Dose*—from 1 to 1½ drams by inhalation. *Anti-asthmatic.*

Salipyrin, $C_{11}H_{13}N_2O.C_7H_6O_3$, antipyrin salicylate, occurs in crystalline scales or in powder; it is odorless, of a pleasant acidulous taste, almost insoluble in water and ether, and freely soluble in alcohol. It may be given in all cases in which the combined action of antipyrin and salicylic acid is desired. It lowers the fever temperature of the body, and has pronounced analgesic action in cases of acute articular rheumatism, diminishing the tense and painful feeling in the affected joints, without producing the profuse perspiration seen after the use of salicylic acid. In rheumatic sciatica and in neuralgias of the face of rheumatic origin, its action is prompt. Hennig recommends it in influenza. *Dose*—from 15 to 30 grains at intervals of two, three, or four hours, until 90 grains are taken. It may be administered in capsule, wafers, or in solution, thus: Salipyrin, 1½ drams; glycerin, 3½ drams; syr. rub. id., 7½ drams; aqua destil., 10 drams. Of this a tablespoolful should be taken at a dose. *Analgesic, antipyretic.*

Salophen, $C_6H_4 <^{OH}_{COO.C_6H_4N} <^{H}_{CO.CH_3}$, a derivative of salicylic acid, containing 51 per cent. of the latter drug, occurs in the form of small crystalline plates, is white, odorless, tasteless, scarcely soluble in water, very soluble in alcohol and ether. In the body it is broken up into salicylic acid and acetylparamidophenol. When administered in acute articular rheumatism, the pains are rapidly dispelled and the swelling quickly disappears. It is not so prompt in alleviating the pains of chronic rheumatism; nor does it protect against relapse in the acute form, It has but a slight antipyretic action. *Dose*—from 60 to 90 grains daily. *Anti-rheumatic.*

Solutol, is a preparation containing in 100 c.c., 60.4 grams of cresol, of which one-fourth is free, and the other three-fourths in combination as sodium cresol. Solutol is miscible with water, forming a perfectly clear solution. It is claimed that solutol combines the disinfecting action of cresol and sodium hydrate. For the disinfecting of rooms, etc., an odorless, pure form is manufactured. It is generally used in 5 per cent. solution. For surgical disinfection a neutral solution of cresol in sodium-cresol is sold under the name of *solveol;* employed in ½ per cent. solution, it is less poisonous than a phenol solution of equal efficacy (from 2 to 3 or 5 per cent.). *Disinfectant.*

Sozoiodol, $C_6H_2(HSO_3)I_2.OH$, di-iodo-paraphenolsulphonic acid, is a combination of iodine (54 per cent.), carbolic acid (20 per cent.), and sulphur (7 per cent.). It has powerful antiseptic properties, and is recommended as an odorless substitute for iodoform, in syphilitic, tuberculous, and scrofulous ulcerations. On account of its insolubility, sodium and potassium-sozoiodol are specially recommended in affections of the respiratory organs, such as ozena and laryngitis, in the form of insufflations. Sozoiodol itself is very efficacious in tuberculous and scrofulous ulcerations and in affections of the generative organs, such as gonorrhea and syphilis. In leg ulcers and superficial burns Nitschmann advises the use of the following ointment: sodii sozoiodol, 1 dram; lanolin, 10 drams. *Antiseptic.*

Styracol, the cinnamate of guaiacol, has been introduced as a tasteless substitute for guaiacol. It has pronounced antiseptic properties, retards fermentation and decomposition, accelerates the healing of wounds and sores, and has marked therapeutic value when administered internally for catarrh of the bladder, gonorrhea, gastro-intestinal catarrh, etc. *Dose*—5 grains. *Antiseptic.*

Sulphaminol, thio-oxydiphenylamine, is obtained by the action of sulphur on the salts of methoxydiphenylamine. It is a pale-yellow, odorless, and tasteless powder, insoluble in water, soluble in alcohol, glacial acetic acid, and alkalies; it melts at 311° F.; is non-toxic, and has been used with success as a substitute for iodoform. In contact with the animal secretions it is said to split up into its components, sulphur and phenol. Its application is painless, and it appears to be an antisuppurative. It exerts a peculiar desiccating influence upon wounds, which heal rapidly under its influence. Especially is it of service in the after-treatment of nasal operative wounds in the form of insufflations, as well as in diseases of the antrum and frontal sinuses. *Antiseptic.*

Thermifugin, $C_9H_8(CH_3)NCOONa$, methyl-trihydro-oxyquinolin, or sodium carbamate, is a faint, yellowish-white, lustrous salt, forming a brown solution with water. Although it has not come into general use, it is recommended as an antipyretic, being said to combine

the three properties of reducing temperature, retarding the pulse, and increasing the blood-pressure. *Antipyretic.*

THILANIN is a sulphuretted lanolin, designed to replace ichthyol and thiol. It is a dark-brown ointment-like mass, having about the same consistence as lanolin, and a slight sulphurous odor, containing about 3 per cent. of sulphur. It can be readily mixed with liquids, whether oleaginous or aqueous, is absolutely non-irritating, and has a more energetic action than other remedies. It mitigates the itching in a number of skin-affections, and has been used successfully in all forms of eczema, wherever situated, in children and adults. Good results are reported in sycosis, acne, and other affections. *In dermatology.*

THIOL, or German ichthyol, an artificial representative of natural ichthyol, is prepared by heating gas-oil with sulphur. Thiol is met with in two forms: *dry*, in black or brownish scales, or in dark-brown powder with a feeble, bituminous odor and bitter astringent taste; and *liquid*, the latter containing about 40 per cent. of the former, which may be prepared from it by evaporation. An ointment of liquid thiol, 1 in 8, and a dusting powder of dry thiol 1, with starch 1, oxide of zinc 2, and talc 16, have been employed. Thiol is soluble in alcohol, ether, and water. Gottschalk has used it in inflammation of the uterus and its appendages; he has treated parametritic and perimetritic exudations with vaginal tampons impregnated with from a 10 to 20 per cent. glycerin solutions of the drug. A free flow of vaginal secretion is produced, and the tampon is removed in twenty-four hours. At the same time he rubs the abdomen with a salve of thiol. The pelvic exudates disappear in a few weeks. Inflammatory erosions about the vagina are treated successfully with dry thiol powder, while acute and chronic endometritis yield readily to the solution applied on an applicator. At times an exfoliation of the mucous membrane is produced. *Dose*—of dry thiol, from 2 to 10 grains. *In gynecology.*

THYMACETIN, $C_6H_2CH_3C_3H_7{<}^{OC_2H_5}_{NH(C_2H_3O)}$, is a derivative of thymol. It is a white crystalline powder, slightly soluble in water. Its therapeutic properties have not yet been thoroughly studied. In thirty-grain doses it does not produce toxic effects upon the dog. Jolly, of Berlin, has studied its action upon the nervous system of man. He finds that it arrests headaches, except migraine, which is but slightly affected by it. On the contrary, generalized cephalalgia, either paroxysmal or continuous, in the course of some other malady, yields readily to it. It failed in cephalalgia due to a cerebral lesion; and in a case of gastric crisis for a short time only it was substituted successfully for morphine. In some instances it has given rise to congestion of the head, and at times to somnolence. It has also, then, a soporific effect. *Dose*—from 3 to 15 grains. *Antineuralgic.*

TRICHLORACETIC ACID, $HC_2Cl_3O_2$, occurs in deliquescent colorless crystals. It is one of the best caustics in the materia medica, especially for rhino-pharyngology. It cannot be melted on a sound like silver nitrate or chromic acid; hence there is some difficulty in applying it. The best method of application is to wrap a tiny firm ball of cotton-wool round a fine-pointed sound and soak it with the liquefied acid. Whilst chromic acid causes violent pain during and after application, trichloracetic acid does not cause any unpleasant sensation until some seconds after it has been applied, and then the pain is quite transient, and may be entirely or very nearly annulled by cocainizing three or four times before the acid is applied. The parts of the mucous membrane treated with the acid become snow-white, and the action is localized and more persistent. Healing is free from pain or reaction, and is completed more quickly than when the electro-cautery is used. *Caustic.*

TUMENOL, a sulphonated preparation of hydrocarbon, may be used in three forms: 1. Tumenol itself—a dark-brown or brownish-black liquid; 2. Tumenol sulphone, an aromatic syrupy liquid; 3. Tumenol sulphonic acid, a black powder, bitter, odorless, soluble in water. It is especially recommended for the itching of eczema and other forms of dermatitis, prurigo, and pruritus, in the form of a 10 per cent. tincture, with a menstruum consisting of equal parts of ether, rectified spirits, glycerin, and water. It has not the penetrating anti-parasitic and absorption-promoting properties of ichthyol, and is, therefore, not of service in erysipelas or in the local treatment of exudation or infiltration in which ichthyol is so useful. Moist compresses soaked with from a 2 to 5 per cent. solution of the sulphonic acid are serviceable in the treatment of acute recurrent eczema of the hands and face. In the form of a paste, of from 5 to 10 per cent., tumenol oil proved more effective than the simple zinc paste, not only in eczema, but in superficial ulceration, impetigo, and pemphigus. *In dermatology.*

CLINICAL MEMORANDUM.

TWO FATAL CASES OF OBSTRUCTION OF THE COMMON BILE-DUCT.

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THE two cases that I herewith report are interesting because both of their unusual termination and the therapeutic lesson that they teach. They were seen at the Philadelphia Hospital in the ward of Dr. J. B. Walker, by whose kind permission this publication is made. By one of those strange coincidences so commonly encountered, the patients occupied adjoining beds, and died within a few days of one another.

It is not uncommon to find biliary calculi at autopsies in cases of death from various causes, but death as a result of occlusion of the common bile-duct in connection with cholelithiasis is not common, while death following acute occlusion is rare.

One of the cases involved a man, seventy-seven years old, of feeble intelligence, with emphysematous lungs, atheromatous vessels, and degenerate kidneys. All that could be learned was that the jaundice, which had existed for several months, had set in suddenly with vomiting. For a considerable time the man presented typical "hepatic intermittent" fever, with irregularly-recurring rigors, pyrexia, and sweats. The stools were pale. The persistence of the jaundice, notwithstanding energetic medication, made probable the existence of some form of profound mechanical obstruction, the precise charac-

ter of which remained undecided. The patient died of asthenia, the jaundice having continued for at least three months. At the autopsy, the gall-bladder was found to be dilated, and presenting numerous diverticula; during the manipulations it ruptured, giving exit to about ten ounces of a fluid of milky appearance and a large number of whitish gall-stones, varying in size from that of a bean to that of a pea, of which forty-one were collected. The liver was moderately enlarged; the cystic duct and the hepatic canals throughout the organ were dilated and contained the same kind of milky fluid as was present in the gall-bladder. The lumen of the common bile-duct was obliterated at the junction of the cystic and hepatic ducts. In this situation, the biliary passages were adherent to the duodenum. Beyond, the common duct was patulous to its point of entrance into the duodenum. The condition suggested the previous existence of obstruction of the common duct by a calculus, with ulceration, adhesive inflammation, perforation into the duodenum, escape of the offending calculus, and cicatricial occlusion of the common duct.

In the second case, a man, forty years old, previously in good health, following the ingestion of cold water was suddenly seized with severe abdominal pain, nausea, and vomiting. The temperature rose to 103.6°, for a few days oscillated about that figure, and subsequently slowly declined. Jaundice was from the first marked, and grew more intense. The patient became quite delirious. Treatment by means of mercurials and sodium phosphate was of no avail, and on the tenth day the patient died. At the autopsy, the liver was found to be enlargd, weighing six pounds. In the left lobe was a small, fluctuating area that, on incision, gave exit to a dirty yellowish fluid, exposing dilated canals and cavities. Section of the liver at various points permitted the escape of fluid of the same kind, in less quantity in the right lobe than in the left. The gall-bladder was contracted to the size of a large marble. It contained brownish fluid and fragments of a greenish color. The hepatic ducts were dilated. At the commencement of the common duct loosely lay a "mulberry" calculus of cholesterin about as large as a walnut. The pancreatic duct was distended with fluid.

It seems probable that in both of the cases reported death resulted from cholemia, and the deduction is likewise obvious that in both life might have been saved by operative interference. In either case, the provision of a means of escape for the bile would have constituted at least a palliative measure. In the first, radical treatment would have necessitated the performance of cholelithotomy followed by cholecystenterostomy; in the second, cholelithotomy might easily have been followed by suture in the line of the incision. The obscurity of diagnosis scarcely constituted a legitimate contra-indication for operation. Exploratory incision would have removed all doubt. The positive information thus to have been gained would have compensated for any risk incurred.

MEDICAL PROGRESS.

Hereditary Chorea.—Sinkler (*Medical Record*, 1892, No. 11, p. 281) reports three additional cases of so-called hereditary chorea. He concludes that the affection, while resembling Sydenham's chorea, differs in so many of its features that it is essentially a distinct and separate affection; that while, as a rule, there is remarkable uniformity in the symptoms presented, there may be variations. Thus, the disease may appear at or before puberty. It is not an invariable rule that if the disease fails to appear in one branch of the family the descendants of that branch have immunity. The arrest of the movements by voluntary effort is not a distinguishing feature of hereditary chorea, as in some cases voluntary effort aggravates the movements, and there are many cases of Sydenham's chorea in which voluntary effort for a time arrests the movements. Chorea among the adult insane is not hereditary chorea with insanity. The evidence at hand indicates that hereditary chorea depends upon a degeneration of imperfectly-developed cells in the motor tract or in the cerebral cortex and in the spinal cord.

Schlesinger (*Zeitschr. f. klin. Medicin*, 1892, xx, 1, 2, p. 127) reports three cases of hereditary chorea from the clinic of Nothnagel, at Vienna. He considers the affection a distinct one, usually appearing in adult life, although some cases appear early. As a rule, the transmission is from generation to generation; exceptionally, a generation is skipped. In some generations the affection may be replaced by profound hysteria. The disease is progressive. Treatment with arsenic is rarely successful.

Intermittent Influenza.—Kornblum (*Zeitschr. f. klin. Medicin*, 1892, xx, 1, 2, p. 160) reports the observation of seven cases of influenza presenting an intermittent type. The attack was preceded by a prodromal stage lasting from two to six days, and marked by languor, headache, anorexia, and malaise. After an initial chilliness, fever, for three days remittent in type, then intermittent, appeared, the symptoms being intensified during the exacerbations and moderating in the defervescent periods, though in neither instance in direct ratio to the temperature. The pyrexial periods were irregular in occurrence; sometimes two exacerbations appeared on the same day, but in the morning there was always apyrexia. The intermittent stage of the disease lasted from five to nine days, without diminution in the intensity of the febrile periods; the later of which were, in fact, preceded by chilliness, while defervescence was accompanied with sweating. In the exacerbations the pulse was accelerated to from 110 to 140 per minute, usually small and compressible, often irregular. In most of the cases nervous symptoms predominated, though catarrhal symptoms were also present. The prostration of the exacerbations was marked.

Fatty Heart with Slow Pulse.—Watts (*British Medical Journal*, No. 1624, p. 334) has reported the case of a man, seventy-seven years old, who had had syncopal attacks and an attack of left hemiplegia. For two days, while abed, the pulse was 19, soft, regular, and synchronous with the action of the heart. On two other occasions the pulse was 28. On the day before death, during an attack of syncope, two beats of the pulse were felt at an interval of five seconds. A little later the breathing ceased, and the pulse was lost for a period of ninety-five seconds. Breathing was then resumed, and

the pulse was restored, with a frequency of 35 and 90, respectively. Two hours afterward the pulse—radial, carotid, and temporal—ranged between 12 and 13, being regular, fairly full, but readily compressible. At the autopsy the heart was found to be large, pale, flabby, laden with fat; it weighed seventeen ounces. The muscular structure of the organ was atrophied and in parts replaced by fat. The cavities were dilated and empty.

Empyema of the Gall-bladder.—BÖGER (*Centralbl. f. Chirurg.*, 1892, No. 11, p. 227) reports the case of a woman, forty-eight years old, who presented a large tumor, principally occupying the left half of the abdomen. There was neither jaundice nor colic, but only a sense of distention. A diagnosis was not ventured. The patient at first declined operative interference, but subsequently solicited it, the growth meanwhile having increased in size. When the abdomen was opened the tumor was seen to be the enormously dilated gall-bladder. An incision evacuated a quart of purulent fluid. Two gall-stones, as large as walnuts, were found in the cavity of the bladder, and a third in the cystic duct. The last was removed with some difficulty. The gall-bladder was stitched to the abdominal wall and the wound was permitted to granulate. The ultimate result was entirely successful.

The Influence of the Gastric Juice upon the Virus of Hydrophobia.—WYRSYKOWSKI (*Archiv für veterin. Wissensch. —Wratsch*, 1891, No. 38) has demonstrated that the gastric juice is capable of neutralizing the toxicity of the virus of hydrophobia. For this purpose he prepared three test-tubes: one containing egg-albumin and gastric juice, and each of the two others an emulsion of the medulla of a rabbit dead of hydrophobia, the one with, the other without, the addition of gastric juice. A number of animals was inoculated beneath the dura mater with material from each of the tubes. Those treated with the digested albumin remained unharmed; of seventeen animals treated with the undigested medullary substance, all died; while of twenty-one treated with the digested medullary substance, all survived.—*Centralbl. für Bakteriol. u. Parasitenk.*, 1892, No. 11, p. 349.

Pigmentation of the Skin from the Use of Arsenic.—FÖRSTER (*Berliner klin. Wochenschr.*, 1892, No. 11, p. 262) reports a case of chorea in which a brownish pigmentation of the skin appeared after the prolonged therapeutic use of arsenic. The withdrawal of the remedy was followed by disappearance of the discoloration.

THERAPEUTIC NOTES.

The Employment of Pilocarpine for the Relief of Deafness.—FIELD (*British Medical Journal*, No. 1631, p. 701), who was perhaps the first to recommend the employment of pilocarpine in the treatment of labyrinthine deafness, insists that the cases must be carefully selected. He maintains that labyrinthine deafness is not common. The larger number of patients that hear better in the midst of noise derive little or no benefit from the sole use of pilocarpine. Hearing is best tested by means of a large tuning-fork with a wooden handle. The treatment may be employed in cases in which bone-conduction is defective. Syphilitic patients are usually much relieved; in a given case, the possibility of hereditary syphilis is to be borne in mind. Cases in which the deafness is worse after catarrhal inflammations are mostly not suitable. Patients that hear when spoken to distinctly, or in whom the deafness began with a difficulty of discriminating sounds, or who cannot make out general conversation, who hear worse when tired, nervous, or out of health, are more promising cases. In arriving at a diagnosis, the state of hearing, as tested by the watch and the condition of the drum-head, should be noted. Some cases of marked aural vertigo are benefited by treatment with pilocarpine. If disease of the middle ear is associated with disease of the internal ear, vapors should from time to time be injected through the Eustachian catheter. The usual mode of administering pilocarpine is the injection into the arm of gr. $\frac{1}{12}$ of the nitrate, gradually increasing the dose to gr. $\frac{1}{4}$. The injection is followed by the administration of half a dram of ammonium carbonate in water. The patient is well covered and copious diaphoresis and salivation take place. In case of faintness or other discomfort, brandy is given.

The Treatment of Epilepsy.—HUCHARD (*Rev. Gén. de Clin. et de Thér.*, 1892, No. 9) insists that in case the bromides fail in the treatment of epilepsy it must be determined that the lack of success does not depend upon the mode of administration. For epileptics, the bromides must be looked upon as food; about thirty grains should be given three or four times daily. If the attacks occur at night, the largest dose should be given a short time in advance. If the disease has appeared late in life, especially if there is a history of syphilis, iodides should be conjoined with the bromides. Should cutaneous eruptions appear, an intestinal antiseptic, such as naphthol or betol, may be administered. If, despite all precautions, the bromides are not well borne, borax may be tried. The agent must be free from all impurity. It is insoluble in alcohol, slightly soluble in water, and more soluble in glycerin. It sometimes gives rise to derangement of digestion, cutaneous eruptions, emaciation and conjunctivitis. If diarrhea occur, bismuth salicylate may be given. Borax is said to be the more useful in symptomatic epilepsy, the bromides in neurotic epilepsy. Treatment with borax is begun with daily doses of from seven and a half to fifteen grains, which are gradually increased to sixty, seventy-five, one hundred and twenty, and even one hundred and fifty grains. If large doses are not successful, the remedy should be withdrawn. If the attacks are controlled, the dose may be reduced to sixty grains. The remedy is given morning and night. Should the bromides and borax fail, amylene hydrate may be employed in doses of from ten to thirty grains three times daily.—*Centralbl. f. die gesammte Therapie*, 1892, x, 4, p. 209.

For Laryngismus Stridulus.—

℞.—Chloroformi . . . . . gtt. x.
Glycerini . . . . . ʒjss.
Aquæ . . . . . ʒj.—M.

S.—A teaspoonful every thirty minutes.—*Journ. de Méd. de Paris*, No. 13.

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PROFESSIONAL IDEALS—A POLITICAL PARALLEL.

IT has been suggested that, at this season, when several thousand young men are passing from student to practical medical life, a word to them would be appropriate as to the proper aim of effort and the best method of attaining legitimate professional success. It might pessimistically be replied that *facere* will depend upon *esse*, that whether physician or not the man will do that which his essential nature commands him to do, that his life will be the realization of his inherited character. But the believers in fatalism are commonly those that want a lame philosophic excuse for indulgence of desire, when there co-exists a half-smothered subconsciousness that the desire is selfish and could be overcome if the will were strong. In opposition to this it may be truthfully urged that at the beginning of life a large measure of free-will obtains, and that in youth when unselfishness, moral fire, and enthusiasms are more potent, a conscious choice and purposive endeavor often set the beat of a life-song, and the step of a life-march.

The substance of that which one may advise is easily summarized in a very brief word, but its realization may be rendered more clear by a political parallel.

There are few sadder memorials of the tendency toward human degeneracy than the history of some of our common words. Take one of many: At one time the word "idiot" had absolutely no reproach in it; it was simply the name of a private citizen as contradistinguished from a public officer or personage. It soon came to pass that one having any large capacity interested himself in public affairs; from this the honorable man was he that labored for the public good, and the idiot was he that did not care for the common weal, and hence was stigmatized as selfish, narrow, etc. From this point the word idiot was more and more limited until finally it has come to be applied to one utterly devoid of reason and self-government, and we can now make the term but little more offensive by the adjective drivelling.

In American public life we are witnessing the same metamorphosis of the once honorable words politics and politician, but in the strange fatality of historic change the process with us is the reverse or obverse of that passed through by the word idiot. The private citizen at present remains unnamed and unconsidered, whilst the public man, the politician, is doing all he can to make his generic title the synonym of whatever is cunning and selfish and unprincipled. How many centuries will it take to make the word politician applicable only to the "safe-cracker," then to the vilest pickpocket, successively to the demented beggar, or the anarchist paranoiac? Certainly very few centuries will be needed at the present rapid rate of change. To call a decent man a politician is already about as great an insult as is possible.

The ugly thought at once presents itself, however, that the method of politics is too often and too widely the American ideal. It is true we have all grown so cunning as to shirk the word whenever we can. If our political or commercial hero happen to unite in himself, in exceptional measure, the three mundane virtues of cunning, selfishness, and unprinciple, we euphoniously call him a great statesman or an astute financier. The little statesman is the ward-boss, and the little financier is the bucket-shopper and commercial gambler of a thousand malodorous types. From "heeler" to governor, from gutter gamin to railroad-wrecker and stock-waterer, the aim is to "get a pull," to get on, literally by hook or by crook.

What is so common a psychologic feature of the modern could hardly fail to have transplanted

itself into the inviting field of medicine. It is the great national sin and danger, and also the great medical sin and danger. The trust of the patient in his physician, his helplessness in the hands of the physician, the physiologic ignorance of the people engrafted upon their gloomy medieval inheritance of magic-mongering and quackery, make them easy prey for the politician-doctor. And this Mephistophelean gentleman is thoroughly at home amongst us—coolly asking, with his elder brother TWEED, "*What are you going to do about it?*" These impudents are the quacks *within* the profession, because quackery is an affair solely pertaining to the use of medical opportunity, not to the acquirement of medical knowledge and skill. Sometimes, though rarely, the most execrable quacks are skilful physicians. It is not that they are not medically capable, but that their medical capacity is used as a tool, not as an end; as a means for selfish advancement, not for a humane purpose. If not curing will bring more money than curing, they will postpone cure until the patient has been sufficiently bled—financially—and fictitious cure is often made to take the place of real cure. These are the sneak advertisers, who are always seeking notoriety by the thousand devices of the political trickster. Every thought of their lives is how to gain new patients, and as one of the means to this end is to cure disease, they will even take the patience to try to learn this art. A consoling fact, however, is this, that therapeutics pursued in this way generally misses its object. It is to the genuine, not the simulated, love of medicine; it is to the conscience burdened with responsibility, not to the conscienceless; it is to the lover of his patient, not to the lover of self, that comes the subtle intuition and discrimination, the blessed healing power that brings health out of disease. The wise patient will not always choose the famous and popular physician. Notoriety is usually better for the practitioner than for the patient.

To the young physician standing at the parting of the ways, the ideal of quick popularity and brilliant success so often, too often, attained by the politician-doctor, offers a powerful temptation. The other method is undoubtedly slower, but it has the certain advantage of being surer. It may be safely asserted that in general government and legislation, the dominion of the corrupt boss and the typical politician is distinctly on the downgrade and brakeless. Despite his ignominious and astounding success he is doomed. Not only will his name be anathema to future generations, but his present power is being swept away from him by the great wave of righteous indignation now swelling in the American breast. Just as physical civilization and social well-being make him and his methods incompatible and expensive, so the politician in medicine has had his day of proud blooming and early rotten fruitage. In medicine he is more out of place than anywhere else. The laws of physiology and pathology cannot be duped or long trifled with. Let us not be deceived by the examples in all our eyes of the success attending cunning, scheming, barter, self-seeking, and principlelessness. These men live in constant fear, duplicity, and suspicion. They are always seeking to make tools even of their friends. They know they are in the wrong, but they must plunge on in the chosen road.

The examples of success thus gained, however striking, are rare; the great bulk of the profession being made up of the other type—the men that love their work, who, before self-seeking, wish earnestly to forefend and to cure disease. It is not only the higher wisdom, but it is also simple worldly wisdom to class oneself with the larger and better professional brotherhood. The choice on entering, the resolve purely and sincerely made, now and here, matriculates the young alumnus into a post-graduate school whose diploma assures the love and honor of his fellowmen, and the best as well as the most enduring success. Don't sneer at sentiment; it is by it that we live, and it makes all good things; don't let the scoffs of the moral suicide turn you from the fact that morals and medicine must go together. The universe is made that way, and the sneerer finally comes around to the confession. In his heart every expert trickster wishes he had made the choice that is given to you, O young alumnus, to make!

ABDOMINAL AND UTERINE TOLERANCE IN PREGNANT WOMEN.

THE medical profession is indebted to HARRIS, of Philadelphia, for a most suggestive contribution to the literature of abdominal and uterine tolerance in pregnant women. This well-known writer has for some time been instrumental in providing obstetricians with information regarding the Cæsarean operation, and his present contribution is especially valuable. By painstaking and accurate research, he

has collected twenty cases in which pregnant women have sustained penetrating wounds of the abdomen and uterus; the results in each case having been carefully ascertained, and being substantiated by reliable witnesses. To summarize the conclusions reached from an analysis of these cases, it may be stated that healthy women, leading lives that take them much in the open air, and engaged in work that develops the muscular system, frequently recover from such serious accidents as those described by Dr. Harris. The agencies that inflicted the injuries were: the horns of cattle, sharpened wooden utensils, revolver-bullets of small caliber, knives, and other penetrating instruments. In several instances, the injury was immediately followed by the birth of the fetus, and in many of these the children survived. When the accident occurs after the fifth or sixth month of pregnancy, the uterus is often freely opened, and the birth of the fetus may readily happen. In seeking an explanation for the remarkable tolerance manifested by these patients, we have another illustration of the familiar fact that recovery from operative interference depends very largely upon the condition of the patient's tissues and the power of resistance. Thus, a healthy farmer's wife may be gored by the horns of a bull, her child may be born upon the ground, and both may survive, while the rhachitic dwarf, who has labored for some hours in parturition, and upon whom Cæsarean section is skilfully performed, dies shortly after, of exhaustion.

The practical lesson that Dr. Harris so clearly emphasizes is this: that the scientific obstetrician should be so thoroughly aware of the abnormal conditions existing in his patient that when the Cæsarean operation is indicated, he will not wait until useless labor-pains have induced exhaustion, but will operate at the very beginning of, or just before, the labor. It is well, should the uterus be relaxed, to administer ergotine, by hypodermatic injection, a half-hour before the operation. Rapidity, simplicity, and cleanliness in operating will further contribute greatly to success. It is interesting, in this connection, to note that under such conditions children have, in several cases, been born by successive Cæsarean operations.

A SCHOOL OF PATHOLOGY FOR PHILADELPHIA.

The one element in which medical education in the United States has heretofore been most of all deficient is practical pathology. Efforts, all praiseworthy and some successful, are making in various cities and institutions for the improvement of the methods of instruction and the enlargement of the facilities offered to students for the attainment of a solid foundation in this important branch of medical knowledge.

Philadelphia, however, though not a laggard in the movement, does not as yet offer to students and to physicians, all the facilities for pathologic study and research that are demanded if in these days of rapid progress she is to retain her proud position as the center of medical education in the United States; and yet she has at her command resources that, properly utilized, would place her in the front rank of pathologic instruction. The Philadelphia Hospital should be made the nucleus of a great school of pathology, independent of any of the established colleges. A systematic course of lectures and demonstrations by the official pathologists could be given at hours so arranged as to be convenient to the greatest number of students. The material is ample. The facilities exist. It seems criminal that both should not be utilized to the utmost. The movement could only be productive of good, and it would come to be wondered that it had not long before been organized. In this way, one reason of going abroad in order to obtain a solid pathologic foundation upon which to build a substantial clinical superstructure would be removed.

In operative surgery, in clinical medicine, in therapeutics, in gynecology, in obstetrics, in ophthalmology, in laryngology, in neurology, in dermatology—in a word, in the entire field of practice, Philadelphia possesses in each department at least one man whose superior is not to be found anywhere, and numerous others who have the ability, the ambition, and the facilities for earnest and honest clinical teaching.

Let our colleges join with the civic authorities in establishing, as they can, a great school of pathology at Blockley, and the result will be once more to place Philadelphia foremost in medicine upon the Western continent.

SELECTIONS.

NATIONAL CONFERENCE OF CHARITIES AND CORRECTION.

Until the present century, the policy of Europe, in dealing with crime and pauperism, was the best possible, if the object had been to propagate and increase them both. The States of the New World necessarily

copied many of the methods of the old. Unfortunately, along with much that was true and wise, they copied and perpetuated many old blunders. But with the advance of modern thought, especially with the enormous widening of the sphere of scientific knowledge, have come new and better ways of dealing with the defective, the criminal, and the pauper. To spread abroad and make popular the better ways in charity and reform is the object of the National Conference of Charities and Correction, which meets annually in one or other of our great cities, and will hold its Nineteenth Annual Session in Denver, Col., next June. It combines the best philanthropy of all creeds and all shades of political opinion upon the broad platform of humanity. Its program for the year has just been issued, and is an interesting paper, its topics covering many of the social problems of the time. The membership of this conference is unique. It has no salaried officers and no selfish benefit to offer to anyone, so its doors are open to all the world; whosoever will may come in, on a footing of the most perfect equality. The fact that you are interested in its work, makes you a member, and entitles you to a seat and a voice in its discussions. Anyone desiring further particulars as to reduced railroad fare, hotel accommodations, etc., may address Alexander Johnson, secretary, Indianopolis, Ind., who will send circulars and answer inquiries.—*Science.*

THE PERPLEXITIES OF HONEST MEN IN THE PROFESSIONS OF PHARMACY AND MEDICINE IN REGARD TO "BLIND PREPARATIONS."

WE cannot refrain from alluding to an old topic again, because of its increasing interest.

The attitude of the medical profession to the chemist and pharmacist of to-day is an anomalous one, which has been increasing in perplexity year by year, until the day when there will have to be a protocol between the two professions with a view to the settlement of the difficulties is not far distant.

Every new article, pharmaceutical or chemical, is now patented and copyrighted, or protected by some bewildering or misleading name, by a class of chemists and pharmacists who a few years ago would have disdained such a course as much as Jenner would to have made vaccination a secret process.

Here are only a few examples of the kind: Two chemists, one the chief, the other his assistant, discover in the laboratory a sweet principle entirely different from the sugars or glycerin, and name it saccharin. It was raised from the position of a chemical curiosity to that of a medicinal agent, principally as a substitute for sugar for diabetics. The assistant goes to Germany, secures a patent on saccharin, ignoring the interest of his chief, and pursues the manufacture of it as a commercial enterpris. Everyone using saccharin, then, is using a proprietary article, and paying a royalty.

Take the case, also, of chloroform, to which we called the attention of our readers before. We believe that the great bulk of chloroform consumed in this country at present is wholly, or in part, produced by a patented method, and no one could compete, either in purity or in price, who holds on to the old processes.

That independent fortunes have been made by advertising diligently and expertly, keeps a vast army of eager seekers after gold alert to the chances that may lead them into the happy road to good luck. The boldness of some of these men is very great. They set about at once to dupe the medical profession, knowing that in proportion to the credulity of the doctors will depend the sales of the vaunted new discovery. Many of them are able to come with arguments and demonstrations that are all but incontrovertible, for some of these eager hunters for gold are men of learning or experience, broken down by former unfortunate ventures, or unwilling to wait the slow process, which, when patiently pursued, leads only to a moderate competency. They know another very important thing, that there is a code of ethics acknowledged by educated physicians, and some kind of artful reasoning must be used to silence the consciences of those who are faithful to their obligations—this class being by far the majority—and to this they apply their talents, too often with success. Many are the trials of faith the medical editor has to suffer at the hands of some of these sharpers, when he is called to discriminate between the manufacturer who is honestly working to supply the needs of the physician, or dishonestly trying to palm off a worthless article.

One would think that the conferences of the Committee of Revision of the Pharmacopeia of the United States would be a good point from which to originate a plan that would settle all the difficulties, but so far the Committee has been able to see no other way than to accept "the code," and abide by it. In the meantime, good and loyal physicians are trying remedies about which they can only learn that it belongs to a certain "chemical series," an intimation practically as mystical as naming it an active principle of some plant of which he never before heard. The profession has already had a practical illustration of this in that therapeutical farce, the rise and fall of "gleditschine," and it will be at the expensive burial of many other abortions, until the true men of both professions clarify the atmosphere.

It is largely a deficiency of education in certain elements of materia medica, pharmacy, and chemistry, that makes the profession such an easy prey to pharmaceutical charlatans, and it is almost entirely due to the strictly honest work of a few manufacturing chemists and pharmacists that the medical profession has such a list of choice medicaments to enrich our armamentarium.

Our present standards need revision; doctors cannot be their own druggists without neglecting duties that appertain more essentially to their profession, but this would be a far better solution of the difficulty than to submit to being taught therapeutics and materia medica by every dealer who has the money to advertise and keep a smart drummer on the road.—*The North Carolina Medical Journal.*

COFFEE-LEAF TEA.

MR. WILLIAM SOWERBY, the veteran and distinguished Secretary of the Royal Botanical Gardens, writes to the *British Medical Journal* the following note on his suggestion for adding to the number of alkaloid

beverages by the introduction of coffee-tea: When walking in the Gardens of the Royal Botanical Society, Regent's Park, and noting the extent of the collection of living medicinal and economic plants of all climes and countries there brought together in one spot, it must have occurred to all of us how very small a number of plants, out of the vast store which Nature has provided, man has bound to his service, and the yet fewer he has taken the trouble to cultivate. During the march of the last half-century in science, medicine, mechanics, steam, and electricity, how little has been gained from Nature's stores. The artificial culture of cinchona is, perhaps, the most noted of the few. Again, any step in eating, drinking, dress, is so governed by habit or fashion that he must be a bold man who tries to turn the current. This is illustrated in tea-drinking. Perhaps there is no one habit so universal; each people has its peculiar tea or closely allied beverage, and most of these have continued the same for many ages. In one it is cocoa, in others, coffee, and in many, tea; in a few special quarters of the globe nothing but *maté* is thought fit to drink, but in only one small district is coffee-leaf tea used. Now we all know that these beverages are found by man to be pleasant and agreeable to him by reason of their containing a peculiar principle called *theïne;* but yet we do not always select for our use the part of the plant containing the largest percentage of *theïne*, or cultivate the special plant with a view to afford us the most valuable part. For example, in coffee the leaves are said to contain 1.26 of theine, and the berries only 1 per cent., and yet over 110,000,000 of men use the berries, and only 2,000,000 the leaves of coffee, although 500,000,000 use the leaves of tea.—*Science.*

DISTRICT OF COLUMBIA MEDICAL-PRACTICE BILL.

The District of Columbia medical-practice bill bids fair to become a law. The homeopathists and the regular profession are enthusiastically united in its favor. The "vivopaths" and "botanic healers" are opposing it. The arguments of these latter, however, have impressed the Congressional sub-committee with the serious necessity for something to regulate them beside a writ *de lunatico inquirendo* and a prosecution for obtaining money under false pretenses. The champion of the "botanics" claimed, to the amazement even of the Congressional committee, hardened by frequent contact with cranks, that a healthy child, if treated according to the botanic method, need never be sick; that it could be educated to work and go on forever, free from all the various ills, if only his system were accurately and diligently followed. The "vivopath" claimed that thousands of people now die because physicians do not know what to do for them. He claimed to be able, in connection with his White Cross University of Science, to cure these people who are consigned to their gloomy fate by reason of the ignorance of his colleagues. As a clincher for his argument, the doctor exhibited a bottle of life-perpetuating elixir and a box of powder of some sort that promised wonders. These visible adjuncts of a claim to invisible power created a very strong belief in the Congressional committee that the bill was a necessity. —*The Medical Standard.*

CORRESPONDENCE.

THE DIFFERENTIAL DIAGNOSIS BETWEEN RÖTHELN, SCARLATINA, AND MEASLES.

To the Editor of The Medical News,

Sir: As indicated by several recent communications in your journal, the diagnosis between Rötheln, scarlatina, and measles is by no means always easy, owing to the great diversity not only in the appearance of the eruption but also in the range of temperature of the, to us, newer disease—Rötheln or German measles, which in recent years has become quite common.

In a limited epidemic that came under my notice last summer, the multiform character of its symptoms was well exemplified. The first group of cases occurred in a family consisting of a mother and four children, none of whom escaped the disease. I had attended several of the children some years before, while sick with rubeola, or common measles. In these five cases, the eruption bore a striking resemblance to ordinary measles, both in color and in the arrangement of the blotches in crescentic form. The points of differentiation appeared to be: Less efflorescence of the skin between the blotches; the rash, though very copious on both trunk and extremities, being more discrete than in measles, with an equally copious eruption. Added to this, as diagnostic points, were: The slight degree of constitutional disturbance; the almost entire absence of catarrhal symptoms; the moderate temperature—not over 101° in any case—and especially my personal knowledge of previous attacks of ordinary measles.

Widely different were the characteristics presented by the second group of cases, especially as regards the appearance of the eruption. In Case I of this group, not related to the previous group by contagion, I found a boy of nine years, of excessively nervous temperament, ill with a mild form of fever; temperature 102°, pulse 120. The chest and back were covered with a uniform scarlet efflorescence, interspersed with minute points of a deeper red hue, spreading subsequently over the abdomen and lower extremities, leaving the face nearly exempt; the whole presenting an appearance practically indistinguishable from scarlatina, of which the diagnosis was made, as probable. The tongue was moist and coated, with papillæ enlarged, but did not present the intense redness usually found in scarlatina of moderate severity; nausea and vomiting were present in a marked degree; also moderate inflammation of the throat. By the third day the rash had begun to fade from the neck and chest, but remained longer upon the back, abdomen, and lower extremities; the subsidence of the eruption was followed by desquamation of a furfuraceous character, except on the hands, where the skin peeled off in small flakes and strips; itching during desquamation was intense, but was not complained of during the height of the eruption; no albumin was found in the urine; nor did any of the sequelæ common to scarlatina develop. This case was at the time believed to be one of a mild form of scarlatina, until the irregular course of subsequent cases led to a modification of the diagnosis.

In Case II, a lad of fifteen presented, on the first day, an evening temperature of 104°, pulse 120; the rash, which was simultaneous with the invasion of the other

symptoms, had the same general character as in the preceding case, except that on the abdomen and lower extremities it occurred in patches of considerable area, leaving the adjacent surfaces free; but little of the rash appeared upon the face. The next morning, about sixteen hours subsequently to my first visit, the temperature had fallen from 104° to 102°; the pulse was 110. The temperature continued to fall, though it fluctuated between 99° and 101° throughout the progress of the case; the fauces were intensely congested, while the tonsils were swollen and partly covered with a fibrinous deposit. The tongue was moist; heavily coated at first, but at no time did it present the peculiar redness of the tongue of scarlatina. The temperature in this case was higher than I have seen anywhere recorded in Rötheln, but the pyrexia lasted only about twelve hours, and was not again approached during the progress of the case. Desquamation occurred, as in the preceding case, with itching, which was much complained of after the disappearance of the rash.

In Cases III, IV, and V, the eruption was of the character described in the preceding cases, but partial in its distribution, as in Case II; the temperature did not exceed 102°, and the cases were all characterized by the short duration and mildness of the symptoms.

It will thus be seen that the diagnosis between certain cases of Rötheln and scarlatina simplex may be exceedingly difficult, if not impossible; but upon studying the whole group of cases we find certain features common to all, that materially assist us, viz.:

1. Shortness of the acute febrile stage, even when the initial symptoms were of considerable severity, as in Case II.
2. Irregular distribution of the rash in all except Case I.
3. Absence of scarlatinal redness of the tongue.
4. Absence of the frequent pulse.
5. Absence of nervous symptoms.
6. Absence of albuminous urine.

While it must be freely conceded that the diagnosis in these cases has not been demonstrated absolutely, the weight of evidence appears to be in favor of that of Rötheln rather than of scarlatina.

While these cases were in progress, and shortly after, I heard from different sources, both lay and professional, of cases of sickness variously diagnosticated as scarlet fever, Rötheln, and roseola; of course, the latter disease is entirely excluded by the contagious character of the epidemic; while, as health-officer, I am in a position to know that no fatal cases of scalatina were reported during the prevalence of the epidemic described.

The practical importance of an absolute diagnosis in such cases is much diminished by the acknowledged contagious nature of both diseases in question; so that isolation and other precautionary measures should in all cases be strictly enforced.

CHARLES H. CHUBB, M.D.
PALENVILLE, NEW YORK.

RELIANCE UPON THE OPHTHALMOMETER.

To the Editor of THE MEDICAL NEWS,

SIR: In an article appearing in your journal of April 2d, taken from the *Therapeutic Gazette* of March 5th, some statements are made that seem to me to hardly express the true position of our science to-day, in the relative value of the different methods employed in the estimation of refractive errors.

However assured we may feel of the superiority of our methods over those of our neighbors, we ought to feel our way carefully. I am so often reminded of the question once put to me, when giving testimony of an expert character, by the counsel for the opposite side: "Doctor, is medicine an exact science?"

Medicine will be exact just in accordance with the exactness of its investigators and the measures they employ. And it seems to me that we ought not to be too hasty in either our support or condemnation.

In estimating refractive errors the value of the measure employed will depend upon the seat of error.

True astigmatism, by which I mean actual and permanent alteration in the curvature of the refractive body, is pretty generally conceded, I think, to have its situation in the cornea. True, it may occur in the effort of Nature to overcome the real trouble, and so give us lenticular astigmatism.

Lenticular astigmatism must always occur when Nature succeeds in overcoming corneal astigmatism. But this secondary error is seldom, if ever, permanent. If it were, astigmatism would be a cause of asthenopia far less often than it is. Mydriatics are only necessary in this class of cases to relieve the secondary muscular effort. And as this effort is maintained only by the utmost strain, the muscle will readily relax when relieved by the proper glass.

Time was when mydriatics were necessary to tell us the proper glass and its axis, but since the introduction of the ophthalmometer of Javal and Schiotz, we have a means of estimating these more accurately and rapidly than we have ever had before.

True, there may be cases in which we may be compelled to resort to mydriatics, as in cases of persistent spasm of accommodation, and in some cases of mixed astigmatism. But, as we all know, even mydriatics may fail us here. We do not speak from a theoretic standpoint, for in our clinics at the New York Post-Graduate School and in the Manhattan Eye and Ear Hospital we have proof of what we say in cases almost without number. Nor do we speak from a desire to fight merely for the sake of fighting, but because of a genuine love for our science, and a desire to elevate and advance it.

The value of retinoscopy, I have always maintained, was depreciated by the fact that lenticular astigmatism endeavors to overcome the error.

The ophthalmometer simply tells us that we have corneal astigmatism, its amount and axis, and experience has taught us that we can rely on its finding. We have to resort to the ophthalmoscope to ascertain the kind. Mydriatics may perhaps be very acceptable to us when we are in doubt. Even Dr. Roosa, who is enthusiastic on the subject, will, I think, admit this.

My views were put forth in the March number of the *Post-Graduate*, to which I beg to refer you.

I feel, Mr. Editor, that the article quoted in your able journal does not properly define our position. We do not entirely disregard mydriatics *in toto*. It is possible that we may come to that, but, after a reasonable trial we feel justified in saying that, given an ophthalmometer and an ophthalmoscope, in the vast majority of

cases mydriatics are unnecessary in estimating errors of refraction. Very truly yours,

Frank Van Fleet.

New York.

[We insert the foregoing in a spirit of fairness, but feel compelled to add that, in our opinion, it contains so many assumptions and errors as to render its conclusions entirely untrustworthy. The article in the *Post-Graduate*, and that of Dr. Roosa in a late number of the *Medical Record*, appear to us still more full of astonishing fallacies. The Medical News, however, cannot spare space to expose them or to continue the discussion. Time will prove that reliance upon the ophthalmometer alone is to the last degree unscientific, and however much in the interest of the physician, is not in the interest of the patient.—*Editor of* The Medical News.]

A KEELEY CURE.

To the Editor of The Medical News,

Sir: Some weeks ago, on the eve of an absence from home, I got a letter of inquiry from a physician of your city relative to the "Keeley Cure" for whiskey and opium. I cannot find the letter or recall the name of the physician, hence I send my reply to you, hoping that I may thus reach my correspondent.

I am deeply interested in this matter, as I was for fifteen years a hard drinker, addicted to regular indulgence daily and to periodic sprees.

I have been a sober man for a year, but it was only after returning from the *third trial* of Keeley's so-called cure, and realizing as I sobered up that there was no power on earth that could help me unless I had *will-power to resist* the accursed appetite. I know I can't take one drink at any time or anywhere, without going into a spree that will last as long as my stomach does not revolt. I know further, that of late years every spree results in serious affection of limbs and muscles, indicating a tendency to paralysis. The appetite comes on every once in a while, but supported by the inner consciousness of these impending results, I have been able thus far to resist, and at each recurrence I find that the appetite is less powerful in strength and endurance of time.

I never had delirium tremens, but in all other respects I have tested inebriety to its depths. Keeley can do no good of any lasting character. All the notices you see are attributable to the zeal of new converts to the fraud. I was the same way until I went back the third time, and kept my eyes open, discovering the frauds and lies. On my last visit, out of 45 patients, I found 33 were there a second or third time, and 2 for a fourth. Each time I came away he pronounced me "*cured for life*," and I was *drunk* before I left Chicago. When I saw that I was gone beyond all hope unless I could control myself and resist, then and then alone I was able to resist. Keeley has a good tonic that puts the system in good condition; the *ennui* and dulness of Dwight force you to walk to kill time. He makes you sleep until you can eat and walk; and exercise, tonic, and quiet do the rest that is done. So if a man has *power* enough to summon his *will* to his aid and exercise his cool *judgment*, as in business, he may be able to hold out—but *unless he can do this* there is no help for him. I have been to five asylums, so called, and in all could get what whiskey I wanted; *all are run for the money*, Keeley's especially. I enclose a slip from the New York *World*, which is common history of Keeley's graduate "cures."

Keeley does no more than any reputable physician can do if he can get the patient really desirous of relief, and get him to keep quietly away from temptation until he is sober and tonics have cleared out his system. There are a few exceptional cases, but they only prove the truth of my argument, that the captive once released and sound in body and head, resolves to keep free and fight for the mastery, and is never for one waking moment found off his guard.

It is a sad concession, but my own long experience and observation teach me that I am correct when I say there is "*no lasting cure for drunkenness* except the solid will-power and eternal vigilance of the patient."

This is the naked fact. Keeley does not cure the appetite, and is a consummate fraud in all respects.

You can use this in any way you see fit, and can write to any of the banks here, or to the Mayor, Hon. Peter Keen, and investigate my reputation.

Hoping this may open your eyes to a thorough investigation. I am yours truly,

Sam. McKinney.

Knoxville, Tenn.

THE TREATMENT OF PNEUMONIA.

To the Editor of The Medical News,

Sir: The old method of treating pneumonia was by bleeding; it was thought that the withdrawal of a certain amount of blood would reduce blood-pressure, and so remove congestion. It is now generally believed that this procedure does more harm than good, for, although in such treatment you reduce the blood-pressure, it must be remembered that one has taken just so much vitality from your patient.

Veratrum viride was next brought into use, and this was followed by the antipyretics, among which are quinine and the coal-tar remedies—all heart-depressants. Sometimes, alcohol and digitalis are used to strengthen the action of the heart, and so by *its* force to get rid of the congestion in an indirect way. These remedies certainly ought to be administered with the greatest discrimination, for an undue stimulation may act with injury to the patient.

A little over a year ago a new thought as to the treatment of pneumonia came to my mind: instead of throwing more work upon the heart, it would, if possible, be far preferable to remove the obstruction, since in mechanics this would be the most natural thing to do. If, for example, there were an obstruction in a water-pipe, instead of putting on more steam, we would try to remove the obstruction directly. As it is well known that the first stage of pneumonia is one of congestion, and as this is the obstruction, my aim is to remove this directly without a more vigorous stroke of the pump.

The following is my treatment: I first give a cathartic of calomel (10 grains) and a tablespoonful of castor-oil. I then apply a cantharides blister over the region of pain, commencing immediately with fluid extract of ergot, giving one dram every three hours, remembering that ordinarily six teaspoonfuls make one ounce, and by using

two of water and six of ergot, a teaspoonful makes a dram at a dose.

The action of ergot is to cause the constriction of the unstriped muscles, of which the coats of the arteries contain fibers. By this method the blood is forced away from the congested parts, and the heart is relieved. Quinine and antipyrin reduce the temperature without removing the cause.

I have had eight cases in which I have used this treatment, and in all congestion was removed in from two to four days, the temperature, respiration, and pulse in that time becoming normal, with rapid convalescence.

I have never used ergot except in the stage of congestion, for the reason that in all cases the disease was arrested before the lung was hepatized. If, however, I should see a case in which there was hepatization, I would still give ergot, not because it would relieve the hepatized portion of the lung, but to prevent the further extension of the disease.

The blister and cathartic no doubt aid in removing the congestion.

Very respectfully yours,

George E. Talbert, M.D.

Beaver Dam, Wis.

NEW YORK.

At the last meeting of the New York Academy of Medicine, held on Thursday evening, April 7th, Dr. L. Bolton Bangs read a paper entitled "Some Results of 'Withdrawal.'" The term "withdrawal," Dr. Bangs stated, has been used to indicate one of the methods of preventing conception. The extent of its use, and the ignorance of its effects, by both laymen and medical men, are deplorable. These effects vary according to the susceptibility of the individual and the frequency of the exciting cause, but they are sooner or later felt by all who practise this form of conjugal onanism. The results may not be observed until the cause has been in operation for months or years. During this abnormal performance of the sexual act, the man is watchful lest the ejaculation should take place within the vagina, and the wife is also watchful lest he should impregnate her. There is, therefore, none of that emotional freedom that happily married persons know. The act is prolonged and the ejaculation of semen is withheld as long as possible; the male organ is then suddenly, sometimes violently, withdrawn from the vagina, and the man suffers what the French call a *coup de piston*. Men who practise this form of intercourse are never sexually satisfied; they have a continual desire for coition and are never physically comfortable. The act is consequently repeated too often, always in the same unphysiologic way. The natural congestion of the prostate and the associated parts, which should be relieved immediately by the sexual act, becomes a chronic hyperemia, the bloodvessels become dilated, and changes in nutrition finally occur, indicative of varying grades of inflammation. As a result of the chronic hyperemia, the prostate and seminal vesicals lose their vital resistance and more easily become a field for the development of tuberculous foci.

It is difficult to get a definite statement from these patients as to their sexual habits. The habitual practice of "withdrawal" should be suspected when a man, especially a married man, comes complaining of so-called neuralgia of the testicles or of various parts of the pelvis, or of pains similar to those experienced by men with stone in the bladder, and of frequent urination, particularly if there is no history of gonorrhea.

Dr. Bangs related the history of two cases in which the act of "withdrawal" had been practised, in one case for a period of five years, and in the other for a period of eight years. In the latter case, among other symptoms, a severe posterior urethritis had been developed, which proved very difficult to cure. The treatment in these cases should not be severe. Strong solutions of silver nitrate seem to aggravate the inflammatory condition.

Dr. E. L. Keyes, in discussing the paper, stated that he has noticed the same symptoms as those described by Dr. Bangs. The harm is done not so much by the act of "withdrawal," but by the voluntary interference with the emotional functions.

REVIEWS.

A Treatise on the Ligation of the Great Arteries in Continuity, with Observations on the Nature, Progress, and Treatment of Aneurism. By Charles A. Ballance, M.D., and Walter Edmunds, M.D. Pp. xxviii, 584. London and New York: McMillan & Co., October, 1891.

It has not been our good fortune ever before to meet with so beautiful a specimen of medical book-making as the volume before us. The plates are beautifully done and the woodcuts are absolutely unsurpassed. It is both for publishers and authors a work of which they may well be proud. Moreover, the contents of the book are worthy of their setting. The authors have spent six laborious years, and the volume contains the record of a very large number of investigations, both in old and new directions, which are of the greatest value in settling several disputed points. In the first place, there is an absolute measurement of the diameter in cross-section of the principal arteries of the body when full and when collapsed. To supplement this, also, there are accurate drawings of the microscopic appearances of the wall of the various arteries, and very careful comparative measurements by other authors, as well as the present ones, as to the relative thickness of the internal, middle, and external coats of the arteries. Taken in connection with the pictures given of the effect of tight ligation of the arteries by rupture of the internal and middle coats, these are of the greatest value. The authors seem to have settled the question as to the amount of force that ought to be used in the deligation of the principal arteries of the body, and show that the conclusion that has been accepted since Jones's classical work on hemorrhage, in 1810, is certainly erroneous. For over three-quarters of a century it has been generally thought that a ligature should be tied tightly enough to rupture the internal and middle coats; but surely anyone after looking at the figures on page 408 would hardly venture to do so. The danger of secondary hemorrhage is most serious, and as the authors have shown on page 4, in 1606 ligations hemorrhage has occurred in

over 328 cases (over 20 per cent.); and that in 651 of these cases the deaths from hemorrhage, with the exception of cases of ligation of the superficial femoral, the external iliac, and the carotids, have varied from 51 to 100 per cent. They have shown both by the study of physiologic occlusion of the ductus arteriosus, etc., and by the study of pathologic occlusion by ligatures, from various authors and in their own operations, that simple but efficient apposition of the internal coat without rupture is the best method of deligation, and exposes to the least danger of hemorrhage.

Their suggestion as to the use of floss silk for the ligature material is certainly worthy of attention, and in the single case in which we have ourselves tried it we have been much pleased with its efficiency. The fluffiness of its surface favors the entanglement of the threads, and so prevents slipping, which, as they show, when the arteries are filled and with the ordinary blood-pressure, is very likely to occur. Moreover, they advocate what they call a "stay knot," and at least two ligatures placed side by side, so as to bring a larger portion of the intima into coaptation than is the case when a single ligature is applied. Whether this knot will stand the test of experience and be accepted by the profession remains to be seen. Certainly in the case alluded to it has answered every expectation. In seventy-one experiments which they have done the vessels have been permanently occluded by various methods without rupture of the coats.

After considering the nature of the arteries, they proceed to the pathologic processes involved in ligation, and show that it is the connective-tissue corpuscles of the middle coat of the arterial wall that proliferate, and that the clot is organized by means of these cells, and not through the leukocytes. Next follow studies of the conduct and fate of the clot, the coats, and the ligature, with a later study of the choice of the ligature, of the knot, and of the force to be employed. The authors have acknowledged the value especially of Warren's services in his admirable monograph on the *Healing of Arteries after Ligation*, and certainly on looking at the first three plates in this book and the figures on page 415 of Warren's book, we are struck by the similarity of the repair of these hollow vessels and the repair after fracture of the hollow bones. They justify the analogy that Warren draws between the callus of bone and what may well be called the internal and external callus in the healing of arteries.

The price of this book ($10) will necessarily restrict the number of its purchasers, but we recommend to all surgeons who feel that they cannot purchase the book, that they at least take it from our lending libraries and read it carefully. It is one of those books of which other books will be made; or, in the words of Bacon, one of those books that are to be "chewed and digested."

Sleep, Insomnia, and Hypnotics. By E. P. Hurd, M.D. (The Physician's Leisure Library.) Detroit: George S. Davis, 1891.

Insomnia is only a deuteropathic condition, but at times it assumes such paramount importance that measures directed toward its relief demand careful consideration. As the condition may be dependent upon so many and such varied factors, it is necessary that these causes be recognized, so that when possible their removal may constitute the first step in treatment. To comprehend the influences that act to induce sleeplessness it is essential first to have a working conception of the processes that lead to sleep. That therapeusis will be the most successful that aims at a restoration of the normal by the removal of disturbing influences, and by the simplest measures supplements and reinforces the natural tendency to the resumption of a condition of equilibrium. As the conditions differ in different cases, so will the selection of the appropriate mode of treatment differ. The therapeutist must, therefore, have not only clear ideas of the normal and abnormal, of the physiologic and of the pathologic, but he must also have at command a knowledge of the various remedies to be employed under the same and under varying conditions, so that, should one fail, another may succeed. Within the limits that Dr. Hurd has allowed himself, he has presented the subjects with which he has undertaken to deal in a satisfactory and intelligent manner. His work bears the stamp of conservative thought. We cannot do better than quote his closing words: "Physicians should be very chary in prescribing the medicinal hypnotics. . . . . Many of them, by constant or frequent use, become positively baneful. . . . First . . . . try fully . . . . all available hygienic resources."

Surgical Anatomy for Students. By A. Marmaduke Sheild, M.D. (Cantab.), F.R.C.S. 12mo., pp. xii, 226. New York: D. Appleton & Co., 1891.

This is a book for students to use with the living model, and contains the substance of a series of demonstrations given by the author to students in course of preparation for the final examinations. Many allusions to operations and injuries give interest to the text, but the scope of the work forbids that it should be regarded as a guide to the operations in surgery. In this respect it much resembles Holden's *Landmarks*, Treves's *Applied Anatomy*, and similar works intended for the use of students desirous of acquiring a practical knowledge of anatomy that leads directly to future confidence as an operator. As such, the book is an excellent guide, and one that, on account of its accuracy, may be safely recommended to all who desire a work of this character. Many anatomic points of direct clinical interest, and many matters of real practical importance, will repay a careful perusal of this work.

Botany: A Concise Manual for Students of Medicine and Science. By Alex. Johnstone, F.G.S. With 164 illustrations, etc. Pp. xiv, 260. New York: D. Appleton & Co., 1891.

We fear in this *résumé* of botanical science the life is squeezed out of it by too great compression. There are so many excellent and more complete handbooks on the subject that one cannot help wondering if the author's belief in the utility of such "concise notes" is not an error of judgment. The question also occurs, Why and in what way is it specially adapted "for students of medicine?" If the medical student seeks to learn something of the plants from which his most valuable and most used drugs (such *e. g.*, as quinine, opium, belladonna, daturine, etc.) are obtained he will not find them even mentioned.

NEWS ITEMS.

The American Pediatric Society will hold its Fourth Annual Meeting in Boston, Mass, May 2, 3, and 4, 1892. The sessions will be held in the Boston Medical Library Association Building, 19 Boylston Place. The preliminary program is as follows:

Monday, May 2—First Session.

The President's Annual Address, by William Osler, M.D., Baltimore, Md.

"Experiments as to the Value of Nascent Ozone in Certain Forms of Diseases of Children, with Demonstration of an Efficient Generator," by Augustus Caille, M.D., New York City.

"Manifestations of La Grippe in Children," by Chas. Warrington Earle, M.D , Chicago, Ill.

"An Epidemic of Alopecia in a School of Girls," by Chas. P. Putnam, M.D., Boston, Mass.

Tuesday, May 3—Morning Session.

Discussion arranged by the Council on "The Relation of Rheumatism and Chorea," by C. W. Townsend, M.D., Boston, Mass.; M. Allen Starr, M.D., New York City; Samuel S. Adams, M.D., Washington, D. C.

"Nomenclature of Diseases of the Mouth," by T. M. Rotch, M.D., Boston, Mass.

Report of the Committee on Nomenclature of Stomatitis.

"Pseudo-Diphtheric Processes," by W. D. Booker, M.D., Baltimore, Md.

"Treatment of Diphtheria by Sublimations of Mercury," by Dillon Brown, M.D., New York City.

Tuesday, May 3—Afternoon Session.

"Typhoid Fever in Children under Two Years," by W. P. Northrup, M.D., New York City.

"Typhoid Fever in Children," by Chas. Warrington Earle, M.D., Chicago, Ill.

"Typhoid Fever in Infancy," by W. S. Christopher, M.D., Chicago. Ill.

"Acute Emphysema in Children, with Report of Cases," by F. Forchheimer, M.D., Cincinnati, O.

"Pre-tubercular Anemia," by B. K. Rachford, M.D., Newport, Ky.

Tuesday, May 3—Evening Session.

Business Meeting at the residence of Dr. T. M. Rotch, No. 197 Commonwealth Avenue.

Report of the Council and Election of Officers.

Reception of the Members of the American Pediatric Society, to be given by Dr. T. M. Rotch at his residence, Tuesday, 9 P.M.

Wednesday, May 4—Morning Session.

"Prevention *versus* Medication in the Management of the Diseases of Children," by I. N. Love, M.D., St. Louis, Mo.

"Syphilitic Broncho-Stenosis," by A. Seibert, M.D., New York City.

"A Simple Method for Clinical Examination of Breast-Milk," by L. Emmet Holt, M.D., New York City.

"Sacro-coccygeal Tumor in a child Three Weeks Old; Operation; Recovery," by F. Huber, M.D., New York City.

(Title to be announced), by Henry Koplik, M.D., New York City.

Wednesday, May 4—Afternoon Session.

"Two Tracheal and Bronchial Casts," by F. Huber, M.D., New York City.

"A Case of Death from Laryngismus Stridulus in Incipient Rhachitis," by Samuel S. Adams, M.D., Washington, D.C.

"The Value of Milk Laboratories for the Advancement of Our Knowledge of Artificial Feeding," by T. M. Rotch, M.D., Boston, Mass.

Action relative to the death of Dr. John Amory Jeffries, of Boston, Mass.

An Anesthetic Investigation has been arranged by the General Committee of the British Medical Association, for report at its annual meeting in 1892. The investigation is to be chiefly clinical.

An Auxiliary Anesthetic Committee, of which Dr. Laurence Turnbull, of Philadelphia, is chairman, has been formed in this country to aid the British Association, and is desirous of adding to the data of the General Committee a collection of such facts as are indicated upon a blank furnished by the committee.

The Hyderabad Chloroform Commission has not settled the question as to the mode of death resulting from chloroform, but it has stimulated the profession to seek the cause from the clinical standpoint.

The German Surgical Society will hold its twenty-first Congress at Berlin from June 8th to 11th, under the presidency of Bardeleben. The meetings will be held in the new Langenbeck building, which will be completed about June 1st.

Kussmaul, who recently celebrated his seventieth birthday, has contributed 10,000 marks ($2500) to the Luise Sanatorium in Heidelberg, as an endowment in memory of a daughter that died in early youth.

Bacillus of Measles.—It is announced that Canon, at the Moabit Hospital, Berlin, has discovered the bacillus of measles.

Sir William Bowman, the distinguished histologist and physiologist and able surgeon, died at London, on March 29th, aged seventy-six years.

Correction.—On page 402 of the NEWS of April 9th, the words following the name of J. Solis-Cohen on the second line of the first column should read: "All the cases in which tracheotomy is indicated do not do as well by intubation as by tracheotomy."

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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PHILADELPHIA

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ORIGINAL ARTICLES.

THE CLINICAL AND PATHOLOGIC SIGNIFICANCE OF VERTIGO.[1]

BY HENRY L. ELSNER, M.D.,
PROFESSOR OF CLINICAL MEDICINE, SYRACUSE MEDICAL COLLEGE, SYRACUSE, NEW YORK.

WITH a more scientific study of medicine and increasing precision in the diagnosis of disease, it becomes necessary to study clinical data with the utmost care, that they may lead to an exact localization of pathologic changes. In many diseased conditions it is possible for us to assume an air of independence toward the subjective symptoms, multiform and numerous though they are, for they may be ignored owing to the fact that the physical examination serves to unravel the hidden abnormality. Not so, however, with many diseases of the central nervous system and its dependencies. While we have methods of examination, of which the results serve only to assist in corroborating or establishing positive anatomic diagnoses, we have no positive physical exploration that allows the exclusion of leading symptoms. Every organ connected with the nervous system has its particular function to perform. The symptoms to which its change gives rise must be traced back again to their origin, demanding always a knowledge of its physiology and anatomy, as well as of those of its environment.

In introducing the subject of vertigo it will be my object to confine myself entirely to my own experience, gleaned from my records and pathologic study. In fact, I am forced from want of time to give only the conclusions of my experience, leaving the detailed consideration of the cases from which such deductions were made for another occasion.

It would be quite difficult to give a definition of vertigo. It is a sensation of giddiness, which we have all experienced, and has for its essential feature a feeling of uncertainty of position in space relatively to surrounding objects. It is always associated with impairment of equilibration. The point that I wish to make is that for perfect equilibration we require a complex of functions, including the coördination of many groups of muscles that are guided by sensory impressions received from many sources. The senses that are trained to subserve the power of equilibration, for it is not inborn, are, broadly speaking, the touch, sight, muscular sense, articular sense, a visceral sense, with the most important organs of special sense for equilibration, the semicircular canals (Grainger Stewart). It can no longer be doubted that the semicircular canals have much to do with the maintenance of the equilibrium of the body. This Flourens proved so long ago as 1828. We are gradually learning from physiologists the exact method as to how these organs perform their functions.

To retain normal equilibrium, it is necessary that the information derived from all sources should harmonize. Let the harmony be disturbed, and immediately vertigo results. Impressions contradicting each other (as Stewart so happily explains) result in vertigo or loss of equilibrium.

The fact that a disorder or disturbance of any of the centripetal impressions that regulate equilibrial coördination gives rise to vertigo must at once strongly emphasize the fact that this symptom is associated with innumerable disorders. It is a sensation of a motor process, and when severe there is actual movement. These views have been held by Hughlings-Jackson, though not new, for in 1854 Russell Reynolds said that the "feeling of equilibrium results from the harmony of our different sensations among themselves, and with the motor impulse which is their combined effect. When any one group of the sensorial impressions is distorted or removed, the balance is disturbed, and as these impressions are themselves the stimuli of muscular action, attempts are made for its restoration, producing vertiginous or allied movements." (Reynolds: *Vertigo*, London, 1854.)

Before proceeding to discuss the vertigo associated with the more grave diseases of the nervous system, I wish to call attention to its association with other less serious and frequently transitory disorders. Of these, disorders of the digestive tract are the most frequent. The giddiness in such cases has characteristics, and is coupled with symptoms that we must learn to recognize. In his eloquent lectures, which must endure as long as medical literature exists, Trousseau has described them fully, as *vertige stomachique*. The leading features of these cases are symptoms of indigestion coming on within one or two hours after taking food, with great distress, possibly vomiting, pain in the stomach, aggravated by pressure; flatulence; and long after

[1] Being part of a discussion before the Central New York Medical Society.

digestion, when the stomach has had an opportunity to empty itself, the vertiginous symptoms occur. In most of my cases, I found an amelioration of the symptoms as soon as the patient reclined, while frequently a dull pain remained for some time after the vertigo. While the vertigo lasts, if the patient attempts to walk, there is constant fear of falling into imaginary holes in the ground. This is aggravated in some cases, and may be associated with loss of consciousness. Objects seem changed as to their position and form, and a peculiarity of this vertigo is that no maneuver that the patient can employ steadies him on his feet. It is important as a diagnostic point to remember that the attacks bear a direct relation to digestion, and in some cases the patient learns to regulate the diet, successfully eliminating such articles of food as seem to increase the vertigo. Occasionally there are no evidences of indigestion, simply a troublesome vertigo that seems to be related to the process of digestion only by the time of its occurrence. While, as a rule, it is easy to detect stomachal vertigo, there are cases in which the clinical significance of the symptoms is misinterpreted, and the diagnosis becomes uncertain. This is particularly true of those cases in which the symptoms persist for a long time. Here it is found that there are no evidences of labyrinthine disease, and the reflexes are normal; the patients take but little exercise, are surcharged with nitrogenous food, tissue-change becomes abnormal, and a toxemia produces vertigo by its central impression. It is probable that in these cases the faulty processes of digestion and assimilation give rise to toxic agents, which act upon the central organ of equilibration, more particularly the fluid in the semicircular canals, with consequent unsteadiness and the vomiting which so often accompanies vertigo. This is more than idle theory, for in no other way can we explain the phenomena.

In conjunction with this variety of vertigo, and at this point where I am emphasizing the toxic origin of many of these stomach vertigos, I wish to mention the vertigo so often found in young, anemic girls, accompanied by headache and constipation. Stercoremia results from long neglect of function, and anemia and vertigo disappear when the source of the poison is removed.

The vertigo of gout, not infrequently found during the interval between the acute attacks, is frequently persistent, in some cases so severe as to incapacitate the patient from pursuing his vocation. In some cases, this vertigo is almost constant, and is relieved only when the patient is at perfect rest. It is frequently associated with considerable pain in the head, and in a few cases I have noticed a severe burning sensation in the helix of one or both ears, more particularly during the night. In some cases of latent gout, the vertigo is one of the earliest symptoms, and is accompanied by manifestations like those of stomachal vertigo, with considerable hyperacidity. In still other cases the positive diagnosis of a gouty vertigo was made only after treatment and diet directed against that habit. It has been my experience that during the acute inflammatory attack of gout, the vertigo disappears.

Vertigo as a symptom of diabetes is probably of toxic origin. It may be an early or a late accompaniment. If it be an early accompaniment, it is due largely to faulty tissue-change, and has none of the symptoms of acetonemia connected with it. If it be late, it may precede for a day or two the fatal acetonemia that ends the lives of so many diabetic patients. In some cases, it may be transitory, and may not materially inconvenience the patient. In a recent case, I found a mild form of vertigo accompanying the characteristic diabetic paresthesia, anesthesia, and other sensory disturbances, which yielded to regulation of the diet.

The different forms of nephritis and albuminuria are also accompanied by vertigo. Whether or not the vertigo be toxic in all cases is still an open question. In the acute forms of parenchymatous nephritis, it is probably due either to an edema of brain-tissue or to uremic irritation. In acute nephritis, a sudden vertigo must always be considered an ominous symptom. If it be associated with scanty urine, much edema and digestive disturbances, it is almost sure to be followed by convulsions, unless active treatment is used. In chronic parenchymatous nephritis, it may be due either to uremia, edema of the brain, diseased cerebral bloodvessels, with an overacting heart, or the accompanying ventricular hypertrophy of nephritis. In both acute and chronic parenchymatous nephritis, all grades of severity of this symptom manifest themselves. In the chronic interstitial variety, it may be looked for with considerable certainty, if there be reason to suspect disease of the cerebral vessels. In this variety of nephritic vertigo, I have found the pulse almost constantly slow, hard, and tense, in one case but 36 per minute. In that case the vertigo was so severe that the patient, a man, seventy-seven years of age, was unable to walk without assistance, and finally died with well-marked uremic symptoms. It is my firm belief that in some forms of vertigo, with nephritis and albuminuria, the cardiac hypertrophy is an important pathogenetic factor.

The different forms of vertigo thus far considered may, I think, be called toxic, and to this class might be added those well-known forms of transitory vertigo, dependent upon the physiologic effects of such drugs as alcohol and tobacco, with which we are all acquainted.

The different forms of lead-vertigo are associated with characteristic encephalopathies, and require no further discussion at this time. I simply call attention to these last-mentioned toxic vertigos, that they may not be overlooked in associating diagnosis and therapeutics.

Let us now pass to the consideration of a form of vertigo, found as the result of brain-fatigue, without other evidences of organic disease, or symptoms of anemia or hyperemia. This form of vertigo deserves particular attention. It is to be looked upon as a warning given by nature to the busy man, and calls for rest before mischief is done to brain and bloodvessel. With this variety of vertigo, not usually severe, there is a sense of weight or a tired feeling in the occipital region. While the patient is at his work, usually toward the end of the day, he suddenly, while writing or speaking, becomes conscious of slight giddiness, lasting as a rule but a few seconds or minutes, and leaving him with a desire to close the eyes and rest the head. This may be associated with general malaise, sometimes with neurasthenic symptoms, or it may be the only evidence of brain-fatigue. It occasionally happens that with this variety of vertigo the patient loses consciousness or becomes faint. As a rule, however, the vertigo with the symptoms described is transitory, and is relieved by giving the brain rest. This variety of vertigo was frequently found as a sequel in the recent epidemic of influenza, among business men who had returned to work before they had fully regained their strength.

That vertigo is an accompaniment of the various cardiac lesions, more particularly valvular insufficiencies, none will deny. But I have observed a form of vertigo that I have not found described elsewhere, associated with well-marked accentuation of the mitral first sound, and strong systolic contraction, without evidences of organic lesion. In this class of cases there is at times a veritable delirium cordis. The patient feels a sense of oppression in the precordial region, the heart strikes the chest-wall with undue force, and the vertigo seems almost continuous. This form of vertigo is most frequently found at puberty, and between the thirty-fifth and fortieth years. It may occur to you that this vertigo is due to some undiscovered cause, but those of you who have observed these cases will agree with me in concluding that the only successful treatment for the same is that which controls the violent systole, overcoming the accentuation and accompanying vertigo.

We now come to consider more particularly vertigo as it is associated with pathologic changes of the central nervous system. With diseases of the cord we have long since associated this symptom, and unfortunately the general practitioner too often concludes that faulty equilibration, with any symptom of cord-disease, means disease of the posterior columns of the cord. It is a positive fact that with vascular irregularities in the cord, either alone or associated with similar changes in the brain, vertigo is not an infrequent symptom.

Spinal anemia is as likely as hyperemia to have vertigo accompany it. In spinal anemia, the general condition of the patient, with improvement while in the recumbent posture, and the other symptoms of that condition, suffice to clear the diagnosis. A chronic spinal hyperemia would probably lead to tissue-change. The vertigo is rarely relieved by the recumbent posture, and the various sensory symptoms would aid in making the differential diagnosis. It might be important to spend a moment in considering the differences between the vertigo of locomotor ataxia and that of *sclerosis en plaques*, or multiple sclerosis. In the early stages of both diseases, before the well-marked and easily-detected symptoms manifest themselves, it is at times difficult, unless the practitioner makes a most searching examination, to differentiate positively and give each symptom its clinical and pathologic value. This is more particularly true of those forms of sclerosis that refuse to remain confined to one system, and in their progress stretch out into indiscriminate lesions. The vertigo of tabes dorsalis has usually the characteristic changes of the reflexes, with, in most cases, more accompanying sensory disturbances and greater ocular changes than that of *sclerosis en plaques*. There are three symptoms that accompany the vertigo of multiple sclerosis that are of great value in making the early diagnosis and giving the symptom its proper significance. They are: Nystagmus, fine rhythmic contraction of groups of muscles, which the patient recognizes but which yet remains unrecognized by the physician for weeks and possibly months, and finally the behavior of the deep reflexes. In the mixed form, in which we have accompanying vertigo, it is not unusual to find absence of patellar reflex on one side, with slight exaggeration on the opposite side. The sensory disturbances that are associated with vertigo, when taken alone, offer but little aid in localizing the lesion. In many of these cases the patient must be seen frequently, and carefully watched before a positive conclusion can be reached.

The vertigo of cerebellar disease has associated symptoms that, as a rule, make its recognition easy. The clinical and pathologic researches of Nothnagel, made a number of years ago, tended to prove that in cerebellar vertigo the vermiform process was most frequently the seat of disease, and this conclusion has been confirmed by others. My records show such a case, in which we had the cerebellar staggering, beginning in the prodromal stage of tuber-

culous meningitis. The post-mortem examination disclosed tuberculous deposits in the vermiform process, with the usual basilar meningeal changes. The accompanying symptoms of the vertigo, which may continue in the recumbent posture, are occipital headache, vomiting, with the characteristic gait of intoxication, and often optic neuritis. The swaying is from side to side, but the patient not infrequently falls backward or forward. There are no sensory disturbances, which is an important fact, and must aid in differentiating from the vertigo of tabes. Pathologically it is interesting to know that symmetrical lesions of the cerebellum do not, as a rule, cause more than slight disturbances of equilibration.

Ferrier's experiments with regard to the direction in which patients fall with involvement of the different segments of the middle lobe of the cerebellum show that with the anterior part involved there is a tendency to fall forward; with the posterior part involved, the head is drawn backward, and there is a tendency to fall in that direction.

With vertigo and staggering of diseased corpora quadrigemina we usually have the same occipital headache and staggering that are found in cerebellar vertigo. The close anatomic relations existing between the corpora quadrigemina and the cerebellum, through the anterior peduncles of the cerebellum, easily explain the fact of the headache and vertigo with staggering in lesions of both of these organs. It is safe, however, in making the differential diagnosis to associate staggering or severe vertigo with quadrigeminal disease, if the ocular symptoms antedate the staggering. This, it appears to me, is the experience of all who have studied their cases and the literature bearing on this question.

Vertigo associated with lesions involving the pons, usually unilateral, is accompanied with a tendency to stagger to one side, and that in the direction of the lesion. The vertigo may at first be slight, but so soon as the fibers of the pons, as they pass into the cerebellum, are involved, we may expect the staggering to one side. It may be safely said that the vertigo in these cases is not the result of paralysis of any of the muscles of the eye, for in most recorded cases these were not affected.

Hemorrhage into the cerebellar peduncles, when unilateral, has been found to produce vertigo, with the same staggering toward the side of the lesion. These symptoms would be associated with hemiplegia and palsies of the cranial nerves, according to the seat of the clot or other lesion, more particularly the trigeminus and facial, at times the sixth nerve.

Progressive neurologists are at the present time probably all agreed that most forms of vertigo are due to disorders that affect the labyrinth—speaking more specifically, the semicircular canals. The time allotted me is inadequate to enter into a full discussion of this variety of vertigo. The leading symptoms that lead to its detection are well known and require no repetition at this time. I do wish to emphasize the fact, however, that the bad prognosis that is often given by writers on Ménière's disease is not justified. The paroxysms of vertigo may be so severe as to throw the patient to the ground, with deafness and tinnitus, and yet in a few cases an almost perfect cure may result. In a case seen two years ago, all the symptoms of Ménière's disease were present—indeed, the case was "a book case"—there was a previous history of specific disease, but the patient, a young man thirty-two years of age, made a perfect recovery. A recent case might be here included under the division of aural vertigo, that had well-marked vertiginous attacks on hearing a loud noise or the striking of a gong. They lasted but a few seconds. The patient also had aortic disease.

The vertigo of arterio-sclerosis requires no mention. It is easily recognized. It is frequently associated with cramping of the muscles of the legs and a tendency to somnolence.

The rapidly-passing attacks of *petit mal* are frequently mistaken for some forms of vertigo. This error is easily made, but the condition following, if closely watched, will be sufficient to correct the diagnosis. The same may be said of the vertigo preceding other forms of epilepsy.

There is probably no cerebral lesion with which vertigo may not be associated.

Vertigo of extra-cerebral and other peripheral origin must not be overlooked, but it offers less interest to clinicians and pathologists than the forms mentioned. In conclusion, I feel that I am justified in holding that while there are many forms of vertigo, a careful study of our cases leads to a recognition of the cause and a proper understanding of the clinical and pathologic significance of this symptom.

THE MICROSCOPE AS AN AID TO DIAGNOSIS IN DISEASES OF THE UTERUS.

BY THOMAS J. HARRIS, M.D.,
OF NEW YORK.

IN the great strides made by medical science in the last fifty years, gynecology has not been behind; the diseases from which woman is a peculiar sufferer have been alleviated or conquered in a large measure; operations and methods never dreamed of by our fathers have been brought forward and have proved successful in relieving pain and saving life. One disease, however, the most dread of all, still baffles the country and city practitioner alike, and gives more anxiety than all other gynecologic maladies combined, namely, carcinoma of the uterus. Our medical journals continually teem

with suggestions as to its treatment; operation after operation is devised for its relief, but whatever the operation the universal verdict is that its success depends on an early recognition of the disease and employment of the knife at once.

The aim of this paper is to describe as briefly as possible the methods of the exploratory incision and of curetting, as an aid to early recognition of the disease, as employed in some of the clinics in this country and abroad, and to show that they are so simple as to be within the reach of every intelligent physician who appreciates the great importance of the diagnosis, at the earliest date possible, of malignant disease of the uterus, and sees so often the disease detected by the finger or speculum in so advanced a stage that operative interference can, at the best, be only palliative.

These accessions to our armamentarium of diagnostic methods have been particularly advocated and their value demonstrated by J. Veit and C. Rougal, of Berlin, in the Royal Hospital for Women in that city. The surgical technique of both the curetting and the excision is that practised to-day by gynecologists in general. For the curetting, which should be employed on the first suspicion, from hemorrhage or otherwise, of malignant disease, dilatation of the cervix uteri to the extent of from four to six millimeters, by means of the sound, is demanded; the curette is then introduced and applied to all the rough surfaces presented to the touch and that are naturally present, as carcinoma always attacks the endometrium first. The masses thus removed are then dried on blotting-paper, and thus separated from mere coagula, and then put in absolute alcohol for twenty-four hours, or, as suggested by Benda, of Berlin, in a 10 per cent. solution of sulphuric acid for from twelve to twenty-four hours, and then for an equal length of time in a solution of potassium bichromate, 1 part, to 3 parts of water. The specimens are then ready to cut. The subsequent steps demand a reasonable acquaintance with histologic technique and a knowledge of normal uterine structures, but not more than every man who intends devoting himself to special work in that department should have. As Veit has expressed it, in his *Gynäkologische Diagnostik:* "It is no play-work that is included with the pathologic anatomy in text-books on diseases of women. It is not the chapter that a man busy with a private practice can pass over; on the contrary, it forms the groundwork of every correct conception of the pathology of the female genitalia. Every gynecologist who wishes to be more than a routine practitioner must master the microscopic anatomy of the female genitalia better than, or at least as well as, the pathologic anatomy."

At the end of twenty-four or thirty-six hours the removed masses are ready for cutting and mounting. The cutting can be done by means of the freezing microtome, which, in my hands, has always succeeded very well. The objection exists, however, that this mode of section interferes with the subsequent staining, and with a little skill sections of sufficient thinness can be made with the ordinary section-razor. For the staining, an ordinary double stain of hematoxylin, followed by picro-carmine, can be employed.

For the proper recognition of the pathologic condition present, as just stated, a knowledge, to a moderate degree at least, of the histologic structure of the uterus is necessary. This, in a few words, is as follows: The cavity of the uterus is lined by a single layer of columnar epithelium. The mucous membrane is, according to the researches of Leopold, made up of bundles of short fibers, forming a meshwork, within which are contained the uterine glands, short and tubular in their character and lined by a single layer of columnar epithelium. The vaginal portion of the cervix is lined by squamous epithelium, like the vagina, in place of the columnar epithelium. In the cervix the fibrous tissue is thrown into folds, between which the openings of the minute glands are found. These glands are more wavy than those in the fundus, and lined by a basement membrane and a single layer of columnar epithelium cells. The character of these glands must be constantly borne in mind, for only by a correct conception of their nature can one detect a pathologic alteration of the tissue.

For a proper appreciation now of the condition present, not such a discriminating knowledge is necessary as at first sight seems demanded. The aims of the gynecologist can all be satisfied by considering and answering in the diagnosis the question, whether the specimen is an example of malignant growth, of benign growth, or indeterminable. If benign in character, the prognosis is favorable, and operative interference is demanded; if malignant, the whole organ, if possible, should be removed; if the result of the examination is unsatisfactory, or pointing, perhaps, to the latter condition, nothing remains but a repetition of the examination.

Now, in reference to establishing a diagnosis of benign growth, we are guided by the presence or absence of alteration in the character of the lining membrane and of the uterine glands; an increase in the number of one or the other elements without an entire exclusion of the other, or without alteration in the appearance of structures themselves, points to a benign overgrowth or simple chronic endometritis. On the other hand, an overwhelming exhibition of one element to the entire exclusion of the other, points to malignant growth, as does a duplication in the normal single layer lining the

glands, or the presence of cancer-nests in the muscular structure of the organ.

When the normal cells lose their contour and assume the spindle-shaped variety, the diagnosis no longer remains so easy, because the sarcomatous cells can be simulated by the decidual cells in abortion, as well as by the cells of the uterine endometrium in extra-uterine pregnancy, and by chronic, long-standing endometritis. In the case of an abortion the diagnosis is, however, generally rendered easy by the presence of chorionic villi. On the other hand, the round cells of the decidua, in an extra-uterine pregnancy and abortion resulting therefrom, so much resemble those of a long-standing endometritis that it is scarcely possible to distinguish between the two. Sarcoma is only to be diagnosticated when the microscope reveals masses of the typical large spindle cells, and between them the normal cells left unchanged. This fact is enough for our purposes to separate it from the picture of the benign endometritis in which the cells are all changed uniformly, even the glands being also affected. Experience and much diligence in the examination are, however, demanded in these cases, and even then instances will arise in which it will not be possible to state definitely, further than that there are no evidences of sarcoma existing in the specimens that have been rendered for examination.

With the affections of the cervix uteri the diagnosis is rendered much easier, for here, by means of the knife, pieces of sufficient size can be removed for examination.

The benign character of the disease can be safely assumed when the lining mucous membrane is preserved; when the cells in the *portio vaginalis* maintain their normal squamous form; when the glands are of the cervical order; when, in fact, there are no changes further than a thickening of the connective tissue or a number of cervical glands with retention-cysts, and between them in the interstitial tissue the ordinary round cells. Quite different is the picture in a typical case of malignant growth; here the well-known cancer-nests are seen pressing deeply into the connective and muscular tissues; the glands themselves are altered in character; their lumen is encroached upon or entirely occluded by layers of cells, not flat, but columnar in nature. The superficial layer of the lining cells may be preserved, and yet, the presence of round cells deep down in the fibrous and muscular coats is sufficient to establish the diagnosis beyond all doubt; while a destruction of the layer of squamous cells and a great diminution or an entire disappearance of the glands, with the presence in the interstitial tissue of round cells of larger and smaller size, is always to be viewed with suspicion, and, if possible, a repetition of the examination is to be demanded.

It is not to be presumed that in all cases the evidences revealed by the microscope will be entirely satisfactory; especially in the first few cases presented for diagnosis will mistakes occur; but as experience and knowledge of the appearance of the normal and the pathologic tissues are gained these mistakes or unsatisfctory examinations will be reduced to a minimum, especially if care is taken by the examiner in obeying the important rule—always to ascertain whence the piece has been removed, and also, always to be sure to make his section not parallel with, but perpendicularly to the surface of the specimen. In this way, we maintain, microscopic examination is a valuable aid and guide to the gynecologist in regard to his mode of treatment, and such it has proved in the hands of those who have employed it faithfully, and who are still employing it to-day. The number of cases in which the uterus has been removed for carcinoma, and afterward found to be free from malignant disease, is by this means much reduced, as are those unfortunate cases in which, for some reason or other, the presence of such disease has failed to be recognized until it was too late for successful operative interference.

ORIGINAL LECTURES.

HYGROMA—DISLOCATION OF THE HIP—FISTULA OF THE LOWER JAW—SUPPURATIVE ARTHRITIS OF THE KNEE-JOINT—ULCER OF THE ARM—MEIBOMIAN CYST—UNUNITED FRACTURE OF THE FEMUR.

A Clinical Lecture delivered February 13, 1892.

By JOHN B. HAMILTON, M.D., LL.D.,
PROFESSOR OF THE PRINCIPLES OF SURGERY AND CLINICAL SURGERY IN RUSH MEDICAL COLLEGE, CHICAGO.

HYGROMA.

You have noticed a small tumor on the side of this patient's neck that fluctuates. He says that he first noticed it about two months ago. On grasping it between my thumb and finger I find that is quite movable, and that it can, therefore, be easily removed. I am inclined to think that we have here a hygroma or watery cyst of the neck, because of the painlessness of the growth, its fluidity, and its disconnection with any glands. If it were an adenoma, or a tumor of the lymphatic glands, we would probably have the glands in its vicinity affected. In the present case there is no indication that any of the other glands are similarly affected. It may be a sebaceous cyst or wen. Wens are formed simply by the damming up of the duct, from which is thrown out the sebaceous material at the root of the hair-follicles. When thus occluded we have a true retention-cyst, a sebaceous cyst or "wen." Sebaceous cysts may occur on any part of the body on which hairs are found. We will now inject the surrounding tissues with cocaine, and after waiting

a few minutes for the full effect of the drug to be exercised, will remove the growth.

In all operations about the neck it is well to press your finger over the root of the neck so as to locate the veins, so that the incision through the skin may not go directly through the veins and give rise to more hemorrhage than would be necessary in the operation. We see here a vein mapped out at the anterior edge of the tumor, so that by incision directly in the center we will escape it. I shall make a simple incision directly over the tumor. It seems to be quite adherent to the skin, and, therefore, necessitates careful dissection. The contents of the tumor, being water or hygromatous, have been expressed during the operation; there remains but the sac of the tumor, which will now be scooped out. I examine the wound to see if all shreds of the sac have been removed. The shining muscular structures seem to be entirely free from any foreign body or neoplastic growth. The wound will now be irrigated, and closed with a single stitch.

DISLOCATION OF THE HIP.

This patient was before us two weeks ago. She is an old lady, seventy-six years of age, and, if I remember correctly, had sustained a dislocation of the hip, which I was unable at the time to reduce. This dislocation was an ancient one, having been received last October. Sir Astley Cooper's maximum limit for reduction of recent hip-dislocations was eight weeks. At the former clinic I said that if the strength of the patient endured, I would try at three successive sittings, by loosening and breaking the adhesions that formed about the bone in its new situation, to restore the bone to its place. I will again make the attempt to-day, not expecting, however, to fully reduce it. If this method—known as Agnew's method—should finally fail, as it may do owing to the length of time the bone has been dislocated, and if the patient still insists on our attempting to effect its reduction, it will be necessary to perform an antiseptic operation by dividing the tissues down to the bone in its abnormal situation. I desire to call your attention to the position of the trochanter, which, owing to the great emaciation of the patient, is distinctly visible. Notice the difference between the crest of the ilium and the trochanter on this (right) side, as compared with its fellow of the opposite side. There is exactly one inch difference in the relative nearness of the trochanters. Notice also the abduction of the knee; that necessarily must be a dislocation of the hip with the bone backward. Owing to the emaciation of the patient it is easy to locate the head of the bone, which is here in the sciatic notch.

Remember that I am not so much expecting to reduce the dislocation this time as to free it from its bands of adhesion, and this process is not unattended with danger to the patient, for we may fracture the thigh if our efforts be too violent, especially in a patient of her extreme age. I am now keeping the knee abducted, in order that the untorn portion of the capsular ligament may remain relaxed as much as possible. When this bone escaped from its normal cavity the thigh must have been abducted, so we must keep it in that general direction in making efforts at reduction. If you notice, we have gained considerable in the motion of the joint since the last clinic day. I can feel the head of the bone slipping now, and it is probable that at another time we shall be able to make more progress. This is, perhaps, all the manipulation of the hip that with safety to the patient it would be practicable to make to-day. One more attempt will be made one week from to-day. I do not think inflammatory swelling will take place in the adjacent tissues as a result of the present manipulations.

FISTULA BEHIND THE INFERIOR BORDER OF THE LOWER JAW.

We see in this case the opening of a fistula just behind the inferior border of the lower jaw. Following up this fistulous tract I find loose pieces of bone that require removal. These pieces of bone are undoubtedly exfoliations. The teeth are decayed. Of course, there is but one thing to do for this boy, and that is to remove the loose pieces, to scrape out the diseased portions of the bone until healthy tissue shall have been reached, then close the wound aseptically and expect it to heal by primary union. It is the opinion of my distinguished colleague, Professor Senn, that by the use of decalcified bone "chips" we are enabled to support the new granulations, as they might be supported by the bony framework of an aseptic sponge, and thus hasten the process of bone-repair.

CHRONIC SUPPURATIVE ARTHRITIS OF THE KNEE-JOINT; DIAGNOSIS AND AMPUTATION.

This patient came into the hospital a day or two ago with violent pain in the knee, that has lasted, she assures me, for several months. The pain was so acute that she could not straighten the leg. As you notice, the knee is considerably swollen; it was almost impossible to make a satisfactory examination when I first saw her. Now that the patient is under the influence of ether we proceed to examine the knee-joint carefully, first, by an external examination, and, secondly, if necessary, by making an exploration of the joint, and it may be that we shall find that the injury is even more serious than it seems from an external view.

The first thing that will attract your attention, I have no doubt, is the increased size of the knee-joint as compared with its fellow; and the next thing is the apparent extreme breadth of the patella. On raising the extremity we find that there is complete ankylosis, perhaps due to contracture of the muscles, possibly due to the existence of true bony ankylosis. You see the actual difference in the circumference of the two knees by measurement is five centimeters. If I press at this point (illustrating), I find a non-fluctuating but elastic swelling, as if it were a tumor pressing out under the edge of the patella. If I press it along the edge of the patella, I fell that same elastic swelling pushing out apparently beneath the patella. On the other side, at the internal border of the patella, I find general inflammatory thickening. We evidently have here either a tumor of the knee-joint or fungous or exuberant granulations of the knee-joint from long antecedent inflammation, and undoubtedly from the presence of the steady pain there must be more or less purulent fluid in the joint itself. As it is impossible to make an exact diagnosis from the external appearances of the limb, it will be necessary to make an exploratory incision. If you will look at the anterior border of the knee, or its anterior surface, you see

that the swelling is quite uniform, so that it must be more than a simple diffuse inflammation of the knee-joint. The steady pain, without tenderness, would not be so indicative of tuberculosis of the knee-joint as if great tenderness were present; but by superficial pressure I was unable, in the examination yesterday, to excite any great amount of pain, and even deep pressure in certain situations did not materially increase the pain. The pain seemed to her, as she expressed it, "deeply within the joint." The patella is immovable, showing that at some antecedent time inflammation had taken place, and by its results the posterior surface of the patella is firmly glued and now adherent to the joint. I shall make an incision along the internal border of the patella directly through the tissues, so as to open the joint on the inside, and then make a similar incision on the external border of the patella, so that we may freely inspect the joint, and then, if necessary, I can connect the two incisions below and turn the patella directly upward. I should explain to you that this patient has been fully advised that she may have what was formerly called a gelatinous infiltration of the knee-joint, something of the nature of a colloid, which is doubtless sarcomatous in its nature or from extensive erosion of the bones composing the joint, and that it may be necessary to perform an amputation. The patient and her friends are fully forewarned that the operation may proceed to any necessary extent. I feel quite confident, as I said to you, that there is pus in the joint, which you now see. Before we proceed further, we will wash out the cavity, then I shall turn up the patella and carefully examine the joint. Several times in recent abscesses of the knee-joint I have found that it was only necessary to simply put a drainage-tube directly under the patella and carefully irrigate with an antiseptic solution, leaving the tube for several days for the purpose of drainage. However, in such a chronic case as this, on account of the changes that have taken place and the contraction of the tendons, irrigation and drainage alone will not suffice. We must, therefore, perform what is called arthrectomy if we wish to remove all of the structures that are involved in the disease. Arthrectomy is performed on the lines that I have indicated, now uniting them with a curved incision. In a normal joint the incisions that are now made will enable us to turn the patella upward with a flap. In this joint, bound down as it is by long previously existing inflammation, it is not sufficient, as the patella is firmly ankylosed to the lower extremity of the femur. We see that a burrowing abscess has extended directly upward for a distance—without exploration I do not know exactly how far—probably to the extreme limit of the synovial sac. You remember that the synovial sac itself extends a little upward beyond the upper border of the patella, in some instances from an inch and a half to two inches.

Further exploration of the condition of this joint is needed. A true arthrectomy consists in turning back the joint, opening it fully and completely, so that every portion of the soft structures involved and the cartilage as well may be reached and removed. Nothing less than that constitutes an arthrectomy, it being different from a resection. In a resection we saw thin slices of the bone; in arthrectomy every bit of diseased cartilage, every bit of the softer structures and portions of the diseased bone are scraped off. In resection we take out the entire joint. The patella has now been removed from its false attachment to the lower extremity of the femur. As I lift the member, almost by its own weight, the adhesions binding the joint together are broken. Our probe must be aseptic, because it may be the pus has not penetrated into the deeper structures of the joint, and if so, we will try again to secure ankylosis after having cleaned out such of the tissues as are diseased. I very much fear, however, that the entire extremities of the femur and tibia are involved in this disease, and in order to cure the patient and to prevent exhaustion from the long-continued drain of pus, it will be necessary to remove the limb. I find the joint is practically honey-combed with sinuses leading in different directions. I now free the extremity of the bone a little. You notice that the bone is so soft that the handle of the scalpel can be pushed into it, and in such a state of disease that the saving of that joint, or an attempt to save it, would ultimately cost the patient her life. A point to determine now is the condition of the tibia. I shall make a deeper incision into the tissues. I find that the tibia is also diseased to an extent that forbids any attempt to save the limb. You see we have been careful in the examination of this joint, so that if there had been any chance to save it we would at any time have it in our power to do so. As it is now, the more it is examined the more extensive the disease is, and we must resort to an amputation.

Here we are able to make an amputation at the "point of selection." What I mean by the point of selection as contra-distinguished from any other situation, is that here we are able to make the amputation at the point we prefer. We must consider the question with reference to the wearing of an artificial limb. Some of you lately witnessed an amputation by my colleague, directly through the knee-joint; in that case the knee, from previous disease, had already become bent at a right angle, the patella was fastened down to the lower extremity of the femur, and, as he explained admirably, that stump was already perfect. It would not be so with a stump that you desired to make new, when the tissues had not become similarly ankylosed or the bone drawn down.

The published experience of operations at the knee-joint is unsatisfactory, so far as their after-results are concerned. The wearing of an artificial limb is made easier by making the incision above the swollen portion of the thigh. Remember what the condition is when an artificial limb is placed on the stump. The weight of the body does not rest upon the end of the limb, but is sustained by the sides. Hence we desire the bone itself to be rounded and conical, and not bulbous at the end. When it is bulbous you find more or less difficulty in wearing an artificial limb. When one is so fortunate as to have one of those rare cases of the patella already glued down on the end of the bone, it would be proper to make an amputation by disarticulating the bone. Under ordinary circumstances it is better for the patient that the limb be amputated above the condyles than through the joint. In this case, in order to make sure of having sound tissue, so that the wound will heal by primary union, we go above the inflamed tissues. I shall operate by making a transfixion; I pass the knife until I reach the bone in front, then by depressing the handle I raise it a little

so as to clear the femur, and pass the knife close to the bone directly in the manner you see. I carve out my upper flap, which is the short one, that is now seized by an assistant; I take the catling and carry it under the bone, pass it in the heel of the incision; I now bring it out, if possible, exactly in the same place; I keep the edge of the knife close to the bone, so that I shall have sufficient flap to cover the end of the bone when it shall have been sawn through. I turn the knife outward and carve a flap outward. The softer structures are now severed; I take the scalpel and cut through the periosteum; it is cut a little lower down than the point at which I wish to sever the bone. I now press the periosteum directly upward, and, as you see, owing to the long-continued disease, it peels very easily; I shall have plenty to cover the ends of the bony stump. This bone is not very healthy even at the point of amputation. It is quite brittle, crumbles easily under the saw, and, as will be seen, there are evidences of medullary inflammation. We now remove the retractor and pick up the bloodvessels. We have here, near the bloodvessel, the sciatic nerve, which we will strip backward, pull out and cut off high up, in order to prevent a neuroma or irritable stump. We now separate the bloodvessels. In cutting off the larger vessels it is well to tie the vein as well as the artery. This may either be included in a single ligature or tied separately. The object of tying a vein, as you know, is not, of course, to prevent hemorrhage, but to prevent any exudations from the flap or infective organisms, from gaining direct entrance into the vein, and thus leading to pyemia. I have now cut into another abscess directly in the upper flap, one entirely unsuspected. I shall now have to remove a great deal more of the tissues in order to free the stump from this infectious material. The cavity is easily seen in the specimen removed. I shall remove enough of the tissue to make sure that all of the pus-bearing portions are removed. It will be perfectly safe now that the arteries are secured, and we can remove all the infected tissues at our leisure. The muscles are dissected up by the previously existing inflammation. You can see layers of muscle between the intermuscular substance. As we have plenty of material, it would be well to even further retrench this flap, as it seems edematous. We must also remember that the lymphatics lie in the meshes of the fatty structures between the muscles, and that septic infection is conveyed into the system through them; so it is necessary that all portions of diseased structure shall be thoroughly removed. I had supposed I was going high enough in making the amputation to escape infection, but an examination of the flap does not indicate it. This muscular structure, as we look at it, seems watery and abnormal in appearance, but the changes are doubtless due quite as much to atrophy of the muscle itself and its commencing fatty degeneration, as from any actual disease. It is the intermuscular substance that is diseased and in which the pus is seen. It will be noticed, too, that when you make an incision directly through the healthy muscle, as in this case, there is vigorous contraction. The one I am raising with my forceps does not contract on pinching, showing an antecedent chronic pathologic condition. This is a somewhat tedious process we are going through at present, picking out the abscess foci, but it is useless to put together flaps that are in a state of disease and then expect primary union. We must, if possible, secure sound tissue. We may expect parenchymatous oozing from the cut ends of the muscle; spurting, however, ought not to occur, and it will be prevented. I think, as a precautionary measure, we will rub the cut surface with iodoform gauze precisely as if we were treating a tuberculous abscess. It seems to be now comparatively clean. Of course, this is not a typical flap, but you see it comes together well; on account of the conditions that guided the course of the flaps it is practically, as it now stands, a circular amputation. The time spent in securing accurate apposition of the flaps is never wasted, as it is quite worth while to make a neat-looking stump and have the cut edges of the skin entirely in apposition. There are two advantages in the use of silkworm-gut for superficial sutures; it seldom slips during the operation, and it prevents the tissues from moving from place to place. A single knot does not slip; it is aseptic, non-irritating to the tissues, and it can be left in place longer than a silk stitch. You notice I am putting these stitches in pretty closely, but I do so in order that we may secure accurate coaptation. The drainage-tube here inserted will not be left in place very long, usually removed about the third day. The object of using a drainage-tube is to secure the evacuation of any redundant exudate, and, for what a machinist would call a "tell-tale"—*i. e.*, to discover early whether hemorrhage is present, this being easier told when a drainage-tube is inserted than when it has been omitted. If you notice, I have a flap absolutely without tension. While there are two side incisions, they are ordinarily not necessary, yet we will have here a very serviceable stump; it is certainly smooth and free from puckering or straining.

There is one point in handling stumps that I think it is well to remember. Always pull the muscles away from the bone; this prevents the patient suffering much pain, and by so doing you are easily enabled to handle it during the period of repair, sometimes without causing any pain to the patient. Carelessness in handling the stump, and not making extension, always works injury to the patient and retards healing.

We will find an advantage later in putting adhesive strips on two sides of the stump, and thus have them run over a pulley and making slight extension by a light weight. That method is almost uniformly practised in certain hospitals.

ULCER OF THE ARM OF INFECTIVE ORIGIN.

It is absolutely necessary, in order to form any sort of opinion as to the condition of this ulcerated surface, to ascertain whether or not it proceeds from the bone. Please notice these fistulæ and their longitudinal character. They extend from the index to the second fingers along the radius and its outer border just outside the biceps muscle. Consider what structures lie underneath. We have here a specific ulcer of some sort that is travelling in the course of the superficial lymphatics toward the body. The poison comes from the outside and its operation is confined to the superficial fascia. It is not lupus or tuberculosis of the skin, because lupus is not likely to follow in that continuous tract. This case is more like one of malignant pustule in its characteristics than anything that can be seen by the naked eye. It is not, however, malignant pustule, because that would have fever as a

symptom. The child's skin is cool; the tongue is clean, showing that the digestive apparatus is not affected. We doubtless have here some form of infection, perhaps not easily explained, unless we make some cultures from these ulcers. I have repeatedly seen oyster-dredgers who had these peculiar-looking ulcers, originating from some infectious material on the outer surface of the oyster-shell, and almost invariably it is found to follow the lymph-channels. We have, then, a case of poisoning of the superficial lymphatics of the palm. It is to be treated, of course, by something that will destroy the germ. It would be well to take certain cultures of these ulcers for observation. I would treat the ulcers by injecting them thoroughly with iodine, taking every ulcer separately, making a thorough hypodermatic soaking of the fungous tissues underlying each. Then I should apply a compress wet with iodine directly over each of them. In order to prevent sticking or gluing fast to the fungous granulations, it might be well to use iodine ointment, which would prevent adhesions of the iodoform gauze.

MEIBOMIAN CYST.

Here is a man with a "stye" on the left eye, and what appears to be a meibomian cyst on the other. Both doubtless originated in the same way. The patient is of hemorrhagic diathesis. "Forewarned is forearmed" in such cases. Having made an incision, we will proceed to close it up with a stitch, which otherwise I would not do. I have now made an incision directly through both, and will simply turn out the sac in each case. You notice how freely this patient bleeds. In an ordinary patient we would not have such hemorrhages. I shall put a stitch through each of these minute wounds. The operation is simple, as it consists in cutting through with bistoury, then taking the forceps and prying out the little sac. I shall put a stitch through the wound, and then place a collodion covering over it. I have now closed the wound with a stitch, and shall compress it with the forceps, and while so compressed and the skin is held, we will apply to it collodion. I retain it until the collodion has begun to form a film. In that way I expect to control the hemorrhage. Failing in that, we will apply a *serre-fine* and leave it on the lid for several days; but you see we have managed to stop the hemorrhage in this case.

OPERATION FOR UNUNITED FRACTURE OF THE FEMUR.

This unfortunate patient, whom I now bring before you, had an operation performed for an ununited fracture of the femur about eight weeks ago. I had intended to again operate upon him three weeks ago, but he was seized with the prevailing epidemic of la grippe, and he had some fever, and of course the operation was considered out of the question at that time. You notice that the femur can be moved in any direction; the man cannot walk upon it, even with the use of an apparatus sometimes recommended for ununited fracture of the femur. If you remember, on cutting into this—and a long and tedious operation it was—we found the lower fragment of the femur had passed directly backward through the biceps and pierced the adductor magnus muscle. The cause of the failure of union was the interposition of muscles between the fragments of bone. It was impossible, under such conditions, to keep the bone in place, so that after a reasonable period had elapsed, as he supposed, he came to the hospital, and an attempt was made on a previous occasion before you to reunite the bones. On that occasion I made the incision down to the bone, freed the fragments from their impalement, and wired them together. During the administration of the anesthetic the patient took ether badly, struggled greatly, and the wires were broken. I then passed the drill into the bone, and left it *in situ* for several days; but, as might have been expected under such circumstances, the operation was unsuccessful. It is proposed now to make one more attempt, to cut down, expose the ends of the bones, bring them into apposition if possible, drill them, and peg them together with ivory pegs.

Statistics show that operations for ununited fracture of the femur have not been successful, but most of these statistics are drawn from the pre-antiseptic period, and are therefore no real guide for us in these days of aseptic operations.

You will notice that the old incision has pretty fairly healed. I shall make the incision in the old line. Part of the silver wiring, not corroded, is seen, and it will be remembered at the time that it was the only wire obtainable at the clinic. The tissues are perfectly sound about the bone, and so far as the former operation is concerned, it is evident that the bone has not been materially injured. There is usually little difficulty in reaching one of the fragments; it is the other fragment that will give us the trouble. Of course, we must expect to have some hemorrhage from these recently inflamed and irritated tissues; it would otherwise not be healthy bone. We had great difficulty in securing the upper extremity of the lower fragment at the previous operation. Of course, the main difficulty of the operation is in getting the lower fragment out of its buttonhole position in the muscular and fibrous adhesions to the opening of the wound. If you notice, the lower fragment is almost the length of my finger from the surface; I cannot place my finger on the bone, because it impinges upon the muscular structures above the bone. As a matter of course, we are always liable to tear an artery by the upper extremity of the lower fragment in its manipulation; we are less likely to do so in this case than in an ordinary ununited fracture of the femur, because the upper extremity of the lower fragment has been cut off and is smoother than when it was originally broken. The real difficulty of the operation is now apparent. I shall endeavor, while the limb is fixed at this angle and the bone brought near to the surface, with this retractor, to make an opening through the muscular and fibrous structures that lie on the bone, until I can reach it and separate the fibers directly over the bone. If that is not practicable, I shall be obliged to make an incision, which I dislike to do, in this situation (illustrating), because, as you see, it is impossible as the bone remains to determine exactly the location of the femoral vessels. The lower fragment seems to be even more securely locked under the upper fragment than it was at the time of the former operation. One of the difficulties under which we labor is the fact that, in a fracture just above the condyle, if I enlarge the incision much in a direction below, I shall interfere with the joint. I do not wish to do that. You notice that the bone is still tightly locked by the dense

structures at the end. I shall have to free it by the knife. We have at last succeeded in getting the end of the bone. I shall now split the periosteum just where you see, and separate it. The periosteum is firmly adherent to the bone, and you will remember that at the last operation this was peeled up for a distance of about an inch and a half, and it is quite adherent over the entire end of the bone, there being enough periosteum left to cover. It is a practical demonstration of the wisdom of that surgical procedure which has been handed down to us from the past—viz., to preserve the periosteum as much as possible. I now saw the end of the lower fragment to correspond with the upper fragment. The lower fragment is extremely soft and brittle; it can almost be torn apart. As the lower fragment is too soft for the drill, I will try the upper fragment. I I can drive a peg directly in without making an opening. Owing to the softness of the lower fragment of bone, I shall now make a figure-of-eight over the two pegs thus driven. This bone must be held absolutely in position while the stitches are being put in. There seems to be no spurting of the vessels, but there is a good deal of oozing, as would naturally be expected in a wound of this extensive character and from old cicatricial tissue. There does not seem to be a great deal of hemorrhage at present; but if we find after a while that arterial blood flows in great quantity, the only thing for us to do is to cut down on the femoral artery in Scarpa's triangle and tie it; but this bleeding, I am sure, is nothing more than venous, as it is quite black, and although free, it does not spurt. We will compress the femoral as a temporary precaution.

I propose to leave the flat retractor under the junction of these two bones for four or five days at least, until the soft parts have acquired their proper situation. Temporary compression of the femoral artery was all that was required in this extensive operation-wound, as you see the hemorrhage has now ceased.

The leg will now be dressed in the following manner: Bichloride gauze packed in on this retractor and washed off carefully with bichloride of mercury, then a little cotton, then over that a plaster-of-Paris splint extending from the ankle to the head of the femur.

PHIMOSIS COMPLICATING SIMPLE VENEREAL ULCER—CARCINOMA OF THE BLADDER AND PERINEUM—URINARY FISTULA FOLLOWING SUPRA-PUBIC CYSTOTOMY—MALIGNANT DISEASE OF THE FEMALE URETHRA.

A Clinical Lecture delivered at the Arapahoe County Hospital.

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PHIMOSIS COMPLICATING SIMPLE VENEREAL ULCER.

Here is one of the more common types of veneral disease, which, with its existing complication, demands for its management a great deal of patience on the part of both patient and surgeon, together with a considerable degree of good judgment.

This young man some two months ago contracted a simple venereal sore that was located at the junction of the foreskin and penis, the foreskin being then well retracted. The irritation of the ulcer caused some discomfort, to relieve which he drew the foreskin forward, covering the glans entirely, and in this position it has since remained, much to his disgust. The foreskin has swollen and become edematous, while the glans is so effectually hidden that it is impossible to reveal it by any amount of manipulation. The secretion from the sore is retained and causes an immense amount of irritation. Operative interference in such a case is not to be lightly decided upon. The simple venereal ulcer—more often called by the old name of chancroid or soft sore—is usually, as in this case, the source of a free discharge; sometimes thin and ichorous, sometimes thick and creamy, but always contagious; any abrasion then with which it comes in contact is converted into another sore, similar in character to the original one. And this is a distinguishing feature of the disease which is expressed tersely by saying that it is "auto-infectious." By this is meant that it can re-infect the patient; there is practically no limit to the number of simple venereal ulcers he may have.

So you can see how the management of this case of phimosis is complicated by the coëxistence of the simple venereal ulcer. Under other circumstances immediate circumcision would be the unquestioned method of treatment, but under existing circumstances a waiting policy has governed the treatment. As it has been impossible to expose and make local applications to the sore, we have simply endeavored to keep it as clean as possible and to lessen the discharge, using free irrigation with a 1:2000 solution of bichloride of mercury, and being very careful to get the tip of the irrigating-tube well back between the glans and the prepuce. Two weeks of this tentative treatment has failed to do more than lessen the irritating qualities of the discharge; the preputial edema is as bad as ever. I will now expose the glans by slitting the prepuce upon its upper surface with scissors, taking care to first thoroughly wash away all the discharge that may have accumulated. As soon as the hemorrhage has somewhat ceased we will apply a dressing of powdered tannic acid and bismuth, which will form a protective scab over the wound, and perhaps prevent it from becoming infected. The prepuce is now sufficiently relaxed to permit of more careful cleansing of the glans and removal of all discharge.

CARCINOMA OF THE BLADDER AND PERINEUM.

This patient you have seen before. He is a German, twenty-seven years of age, and has been in this country but two years. Previously to coming to America he was in perfect health. A year ago, while residing in Toledo, Ohio, he drank freely of the water of a well which had the reputation of causing stone in the bladder, and some time afterward he began to have difficulty in urination. Last summer his trouble had progressed to such an extent that a surgeon in this city performed a perineal cystotomy for calculus and scraped away a phosphatic shell lining the base of the bladder; he also scraped away some material thought to be part of a new-growth. The perineal incision never healed, but became surrounded by a mass of hardened tissue that soon oc-

cluded the urethra and began to slough in the surface of the wound.

He entered the hospital in October last with the hope of having a radical operation performed for the removal of the disease. The condition then existing was such as to contra-indicate any operative measures. The anterior portion of the urethra was absolutely occluded, the cavernous bodies were involved almost as far front as the pubes, the structures of the perineum were all included in one hard and stony mass, while an examination by the rectum showed the posterior bladder wall to be so infiltrated that it felt to the finger as hard and resistant as a child's head coming through the pelvic canal. Operative removal of the growth would have been impossible, since such a measure would have meant the removal of everything between the pubes and rectum. Even if an operation of such magnitude were anatomically practicable, it would have terminated with the patient dead upon the table or dying within a few hours from shock.

We have done little for this man. He was for a time able to control the vesical sphincter and could urinate at will through the perineal wound; that control he has now lost and his urine dribbles away constantly. The mass of the tumor of course interferes with the normal action of the bowels, and they are moved daily by means of copious enemata. He is kept comfortable by hypodermatic injections of morphine.

His strength is rapidly failing and it is only a question of a few weeks until the case will terminate fatally.

For a time I used in this case the treatment of Mosetig-Moorhof, which consists in the injection into the tumor of a dilute solution of methyl-violet, but there was no apparent benefit, and as the suffering arising from the injections was most intense their use was discontinued.

The character of this growth can only be positively determined post-mortem, but it is probably a carcinoma, although his age is an argument against this supposition; still the clinical picture of the case is more nearly that of carcinoma than of any other new-formation. Fibro-sarcoma of this region is somewhat common and is quite within the probabilities, or it is possible that the growth may be of a mixed character.

PERSISTENT URINARY FISTULA AFTER SUPRA-PUBIC CYSTOTOMY.

You will remember this man as the one on whom I operated last October for a good-sized vesical calculus, removing it by the supra-pubic incision; again in December he was submitted to operation, this time the perineal incision being made for the removal of a small uric-acid stone, that was lodged or rather encapsulated at the junction of the prostatic and membranous urethra. Nothwithstanding the long rest afforded to the bladder and to the supra-pubic wound by this second operation, there still persists a small urinary fistula. Sometimes a whole day passes without any escape of urine, but at other times a little escapes every time the man passes water. He is decidedly better, however, than a few weeks ago, and will probably soon be entirely well. The treatment consisted in cauterization of the fistulous tract with chromic acid, a few crystals of which are fused on a probe, passed into the fistula, and brought well into contact with every portion of its walls.

What cause has operated to bring about this persistent fistula? The operation was an uncomplicated lithotomy and the wound should have closed quickly; but several causes acted to prevent this, among them the fact that the patient had a very large bunch of pre-vesical fat which sloughed out; and the encysted stone in the urethra partially obstructed that outlet and thus kept up a more or less continuous backward pressure of urine, which escaped through the supra-pubic opening.

Both of these factors are worthy of more extended discussion, for they are important as illustrating a danger connected with the operation and too seldom mentioned by its advocates—one also that illustrates a source of uncertainty in surgical diagnosis.

There can be no doubt that this case has proved that the perineal incision at first would have given more satisfactory results; it was decided against at that time principally on account of the supposed size of the stone, which seemed to be about two inches in diameter. The subsequent history showed this to be an error—the stone was only an inch and a half in diameter, was oval and flat, and but half an inch in thickness. The sacculated stone in the urethral tract, being at that time unsuspected, played its part in causing this deception, for its contact on withdrawal of the sound was thought to be due to the vesical calculus.

This patient, too, had too much fat for an easy, typical supra-pubic operation; the fat rendered the bladder difficult of access at the time of operation; it sloughed afterward, opening up connective-tissue planes, permitting extravasation of urine into the scrotum, and making the convalescence most tedious. All of these facts point to the conclusion that the perineal incision would have been the easier and safer at the first; as you see, it had to be resorted to finally when the sacculated stone in the urethra was discovered. The scar of the incision then made can now hardly be seen, while this supra-pubic wound still leaks a little and has been a very disagreeable feature.

Another complication of this case, due directly to the extravasation of urine, was an abscess of the left testicle, which formed about a month after his first operation, and was opened at that time by Dr. Parkhill. The testicle is much shrunken, as you may see, but it still retains its characteristic tenderness, and is no doubt, to some extent, still functionally active.

I will now pass a large-sized sound into this man's bladder, as I have done at intervals of a week or ten days for some time past, in order to prevent or lessen any tendency to contraction and consequent stricture at the location of the scar of the incision into the urethra. Notice that the sound is not grasped firmly and forced in, but, on the contrary, the handle is simply supported while the sound practically slips in by virtue of its own weight; notice, too, that I allow the sound to swing far to one side in passing the twisted, slightly contracted site of the incision. Too much emphasis cannot be laid upon gentle handling of the urethra, and I believe that if every physician or student, before attempting to employ the sound upon others, was first compelled to pass the instrument once or twice upon himself, he would have an abiding memory of the sensitiveness of the urethral mucous membrane, and might consequently be more gentle in his manipulations of others. You will notice,

as the sound is withdrawn, that there is no blood on it; this ought to be the rule in most urethral examinations, and would be if urethral examinations were as a rule more gently conducted. Of course, some urethræ are over-sensitive and bleed more easily than others, but every urethra is not so, and a large proportion of examinations may be conducted without the occurrence of hemorrhage.

MALIGNANT DISEASE OF THE FEMALE URETHRA.

Until six months ago this woman, who is sixty-four years old and unmarried, was in perfect health. She passed the menopause at the age of fifty. There is no history of malignant disease in the family, but two brothers died of consumption.

Six months ago she began to have pain during and following micturition, with great frequency of that act, pain on sitting down, and a muco-purulent discharge from the vagina. She has been under treatment by several physicians, and says that she does not suffer so much now as formerly.

The first point worthy of attention upon examination of the external genitals is that the vulva, perineum, and buttocks are excoriated by the discharge, which is manifestly of a very irritating nature. Spreading open the labia, there is revealed an intensely red, swollen, and ulcerating surface, which involves the meatus urinarius and extends upward to the clitoris; by depressing the perineum the anterior vaginal wall is exposed for a short distance, and the ulcerated surface can be seen extending inward in the line of the urethra. Digital examination reveals a still further internal extension, and along the whole length of the urethra to the base of the bladder the deeper tissues are firm, hard, and resistant. The raw surface bleeds freely when touched, and you can see that the pressure on the urethra causes a thin purulent discharge to issue from the meatus. The cervix uteri is almost beyond reach, far back in the sacrum, but feels natural; with which information in regard to it we will be content, as there would probably be no further light shed on the nature of the case by a specular examination at this time, and because the vagina being so narrow, the tissues so tense, and the raw, ulcerating surface so sensitive, an instrumental examination would be excruciatingly painful.

The nature of this growth is almost positively either epitheliomatous or carcinomatous, but there is just enough doubt to render a microscopic examination of the diseased tissue desirable; so I will remove a small fragment with the scissors, and have it submitted to the pathologist of the hospital for his opinion.

If this is a carcinoma, what can be done for the patient? The location and extent of the trouble is such that I am inclined to think there is but little hope of benefit from any operative procedures for its extirpation. The most feasible and reasonable treatment will be to relieve her suffering, which is almost wholly due to the act of urination, by making a button-hole opening into the bladder from the vagina and maintaining a permanent fistula there.

Should this prove to be a localized manifestation of tuberculosis—and such a thing is barely possible—the treatment will be to curette or dissect out as much of the diseased tissue as is possible, and to apply some such local escharotic as lactic acid.

CLINICAL MEMORANDA.

A CASE OF SUDDEN DEAFNESS FROM INHERITED SYPHILIS.

By ROBERT BARCLAY, A.M., M.D.,
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ST. LOUIS, MO.

If we may judge from published reports, a morbid condition very rarely met with, even in special otologic practice, is that of sudden deafness from inherited syphilis. The case of which the history is here cited is instructive in salient features not exclusively otologic, and may prove not without interest to the numerous readers of The Medical News:

Case 3826.—The patient is a girl, twelve years old, of blonde complexion, apparently in perfect general health. Her twin-brother died two or three weeks after birth "of brain-fever." (?) She "has had all children's diseases." At the age of eight years she had eye-disease, but of what nature or character cannot now be ascertained. Of this she was entirely relieved by treatment while at Hot Springs, Ark., whither she had accompanied her invalid mother.

For one year past she has been under the care of another physician for slight deafness. For a portion of last summer, it is said, she was very deaf. Two weeks ago she suddenly, and for all practical purposes, wholly lost her hearing. The deafness is so profound that shouting into the auricle is heard on the left side only, and there as noise which is unintelligible; while there remains in the left ear only hearing, slight at best, for the middle C tuning-fork. The patient can hear her own voice when speaking. On examination, the drum-heads are found a trifle duller than normal, more opaque and lusterless, and the handle of the malleus retracted. All four second molar teeth are simultaneously cutting through the gums. Inflation of the tympana has no effect whatever upon the hearing. An expert opinion as to the appearances of the teeth was secured from Dr. George A. Bowman, the dental surgeon, who examined her by special request. He prepared a plaster cast of the mouth, which is now in possession of the writer. Dr. Bowman reports: "Here is a reproduction of the mouth of . . . with *Hutchinson teeth*, unmistakable! She is an innocent victim of ancestral taint. . . . You see a tooth missing on the left *lower* jaw—never emerged through the gum. You will notice that the molars are dwarfed."

Interrogating the parents separately elicited the fact that the mother has been a sufferer from rheumatism for many years, and that she was treated for it at Hot Springs, Ark., eight and again three years ago. Of her children, the first one died sixteen days after birth, "of hives." (?) Then she had an abortion at the third month of pregnancy. The second child, twin-brother of the patient, died in the second or third week after birth, "of brain-fever." The third lived two months and four days. She then aborted twice successively, at about the third month of pregnancy. The fourth child died six days after birth. The fifth, now living, was born three

years ago; and the mother has not conceived since. The father confesses that he contracted syphilis "many years ago." The family physician as well informs me that the mother, without a knowledge of the nature of her affection, has been treated by him for manifestations of syphilis.

There seems to be a reasonable probability of the correctness of the diagnosis of deafness from inherited syphilis, and the prognosis was pronounced unfavorable.

To complete the history, it may be stated that all therapeutic attempts, though reasonably varied, to relieve the deafness, are of no avail whatever.

Remarks.—Among the many instructive features of the case, it may be remarked that the disease developed, as usual, a short time before puberty; that there was a predisposing local inflammatory condition—chronic catarrh of the ear; and that there was a distinct exciting factor—reflex aural irritation from eruption of the four second molar teeth simultaneously. Thus the *raison d'être* of the *aural* syphilis seems established. The fact that tissue-conduction of tuning-fork sonorous vibrations, and of those of her own voice, gave the patient sensations of sound in the left ear, proves that there remained intact within its labyrinth and auditory nervous system an apparatus for the transformation of tissue into nervous vibrations, and for their transmission to the sensorium.[1]

It is interesting to note the specific phenomena on the maternal side: rheumatism, three abortions at about the third month, the early death of four of her offspring,[2] and unfruitfulness. The death of the first child, sixteen days after birth, "of hives" (?) may be considered an example of the early and peculiar mortality of hereditary syphilis. It will be remembered, in this connection, that, as Dr. Taylor puts it: "In some cases, soon after birth syphilitic lesions are seen in the infant. The most precocious evidence of hereditary syphilis is the bullous eruption, and it is always the expression of profound systemic poisoning."[3] "The onus of hereditary transmission of syphilis is necessarily thrown upon the *mother*"[4] in this case, as well as upon the father; but whether it is always upon the mother only, authorities, especially Drs. Otis and Taylor, differ.[5]

In conclusion, we may remark the suddenness, the profundity, and the hopelessness of this affliction which hovers threateningly over the little child of syphilitic parents.

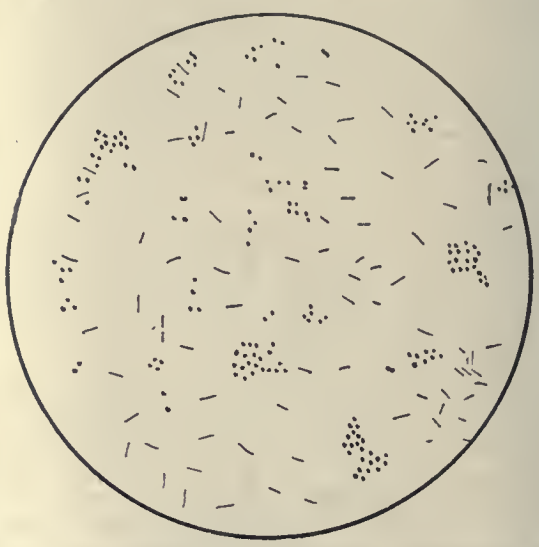
GANGRENE OF THE TESTICLE.

By D. BEVAN, M.D.,
Assistant, Department of Hygiene, Jefferson Medical College, Philadelphia.

On February 18, 1891, a young man was brought into the hospital in an unconscious condition. The resident discovered a tumor in the right inguinal region, which on percussion was tympanitic. When restored to consciousness the following meager and incomplete history was obtained: His mother had died of heart-disease twenty years ago. His father is living and believed to have always been healthy. The patient has suffered from birth with hernia, which was reducible, and an undescended testicle that at times protruded from the external ring. The present attack began Sunday last with vomiting, which ceased toward evening and has not recurred. On Monday his bowels became very costive, and he asserted that there was a palpable increase of the swelling in the right inguinal region. He attempted to replace the bowel, as he had previously done when it descended, but found that this was now impossible. He experienced considerable pain in and extending from the tumor toward the umbilicus. An impulse was transmitted on coughing.

Professor Keen removed the testicle; before which time, however, Professor Brinton, upon the invitation of Professor Keen, attempted to reduce the hernia, in which he evidently succeeded, for, upon cutting down upon the part, no gut was found in the canal. Professor Keen clearly demonstrated the cause of gangrene. The cord was twisted, having one whole twist and a half, thus almost if not absolutely cutting off the blood-supply to the organ.

Immediately after the clinic I made an examination of the testicle. The gangrene was evidently extending, and in a short time would probably have involved the whole organ. The posterior, and especially the lower



Cocci and bacilli observed in the blood obtained from the vessels of the epididymis. Agar-agar culture, Gram's method, Beck's $\frac{1}{12}$ homo. im., Oc. 2. Camera lucida drawing.

portion, was found to be in an advanced gangrenous condition. Upon puncturing the testicle posteriorly with a sterilized needle, it was observed that the parenchyma was exceedingly soft and granular, having been broken down and destroyed either directly by the microbes or indirectly through interference with its blood-supply. There were also large clots in the veins. The connective tissue had not as yet succumbed to the pathologic process, and contained in its meshes the degenerated

[1] Compare Bumstead and Taylor: Venereal Diseases, pp. 511, 729–734; Sexton: "The Sudden Deafness of Syphilis," American Journal of the Medical Sciences, July, 1879.

[2] Compare Taylor (quoting Fournier): Hare's System of Practical Therapeutics, vol. ii, p. 164.

[3] Taylor, loc. cit., p. 175.

[4] Otis: Clinical Lectures on the Physiological Pathology and Treatment of Syphilis, 1881, p. 104.

[5] Compare Otis, loc. cit., p. 104, and Taylor, loc. cit., p. 164.

cells referred to. Upon withdrawing the needle, there oozed out a little thin and blackish fluid. Cover-glass impressions were made and tubes inoculated. The cover-glass films were treated with acetic acid and stained, by a rapid method, with methyl-violet. Examining these slides with a microscope, I found innumerable cocci and bacilli to be present. The thrombi in the veins were infected, as proved by stains made from the removed coagula. Although attempts were made to secure cultures from the infected organ, no growths could be obtained; presumably the antiseptic used in the operation had destroyed their vitality. In sections of the organ no germs were present in the parenchyma, but the clots in the vessels of the epididymis contained innumerable bacteria.

There was reported in one of the last fall numbers of the *Archives de Médecine Expérimentale et d'Anatomie Pathologique* a very interesting series of experiments, made in one of the French laboratories, of the process of infection that occurred in hernia. I am at present unable to find this article, or to even give the number in which the article appeared. It was accompanied by cuts showing the different microörganisms found and their genetic significance. Most important among these was a small bacillus and a coccus, resembling though not identical with some of the cocci of suppuration. The two organisms had been isolated from gangrenous intestines, the result of strangulation, in the human subject. They had also been demonstrated as being the saprophytes of the intestine, and only springing into action when the intestine was subject to unfavorable conditions affecting materially its circulation or obstructing the flow of its contents. The method by which infection occurred was presumed to be as follows: When the lumen of the intestine had become occluded, permitting the production of ptomaïnes in large amount, this led to inflammation, which afforded a suitable nidus for infiltration of the saprophytes. The bacillus seemed more active than the coccus, and could be found not only in the gangrenous bowel, but in the fluid contained in the hernial sac. The cocci were found only in the walls of the sloughing tissue. With these experiments borne distinctly in mind, we are able to arrive at a more definite idea of the method by which infection at this place in the testicle occurred. There had been a hernia, which evidently had not become gangrenous itself, but on account of the strangulation to which it had been subjected, the microörganisms had penetrated its walls and thus infected the vessels of the epididymis. The bacilli are supposed to be active in the production of gas, and some observers ascribe to the cocci the power of engendering gangrene; while this may be true, the writer is of the opinion that in this case at least the disintegration is attributable to the twisting of the cord, thereby obliterating the lumen of the vessels and cutting off the blood-supply.

A CASE OF ACUTE GENERAL CHOREA.

By J. T. BRINGIER, M.D.,
of Bubnside, La.

Dennis E., a colored laborer, nineteen years old, of good habits, was suddenly seized, on March 19th, with violent uncontrollable clonic convulsions, in which the facial muscles and the tongue participated, so that the face was distorted and speech was scarcely possible. I had treated him a month previously in an attack of influenza. In the meantime he had had an attack of mumps. The family of the patient ascribed his condition to the repeated taking, for several days, of copious draughts ot gin, containing a small quantity of quinine. The man was of temperate habits and not accustomed to alcoholic stimulants. It was not possible to take the patient's temperature on my first visit, but I think that it was above normal. He complained of headache and tinnitus aurium and pain in the back. Although the patient comprehended my inquiries, I could learn little from him, because of the difficulty of speech. He was given a full dose of magnesium sulphate at once, followed by the bromides and chloral in combination. The latter was repeatedly rejected. Hyoscyamine, grain $\frac{1}{30}$, was exhibited as a substitute, with satisfactory results.

On the morning of the 20th the patient was quieter, though he had not slept well during the night. The temperature was 102.4°; the pulse, 124. The mental faculties were perfectly clear. The muscular twitchings were apparent about the face and arms, but the lower extremities were motionless. The man had taken food by the mouth, and in reply to my query stated that he was feeling much better. The hyoscyamine was continued, and a fever-mixture containing tincture of aconite, morphine acetate, and spirit of nitrous ether was ordered to be given as needed.

On the 21st the condition of the man was still more favorable. He had slept well during the preceding night. The appetite was good; the temperature, 101.6°; the pulse, 116.

On the 22d the choreic movements were much aggravated; the temperature, 102.4°; the pulse, 134. Unable to account for the rise in temperature, I made a careful examination and found one testicle much enlarged and painful to touch. I now first learned that the patient had had mumps. Metastasis at once suggested itself, with the possibility that the symptoms were reflex. It was elicited that the orchitis had existed from the onset of the attack, but was thought to be of no special consequence. The organ was elevated, and cold applied.

The supply of hyoscyamine having been exhausted, full doses of phenacetin were given instead; and for the sleeplessness, thirty grains of sulphonal were administered at dusk.

On the morning of the 23d the choreic movements were worse than at any time previously. The patient had tossed violently throughout the night. Mattresses were placed on the floor, and though he was much weakened by continued fever, loss of sleep, and violent exertion, it required the aid of three men to permit the subcutaneous injection of morphine sulphate, grain $\frac{1}{4}$, atropine sulphate, grain $\frac{1}{120}$. The injection was twice repeated during the day, plus half a grain of morphine by the mouth, but without any appreciable effect. Forty grains of sulphonal were given at bedtime, but without avail.

On the 24th, despite the violent struggles, the orchitis and the fever had materially subsided. The man was weaker; otherwise his condition was unchanged. At noon he was given hyoscine hydrobromate, grain $\frac{1}{100}$. Four hours later the dose was repeated. After the second dose the patient became calm, and a refreshing

sleep of ten hours' duration followed. Two doses of hyoscine were given on the 25th, two on the 26th, and but once each on the 27th and 28th. There has scarcely been a muscular twitch discernible since the 25th. On the second day of the attack five minims of the officinal solution of potassium arsenite were administered three times a day; the dose was gradually increased to ten minims. On April 7th all symptoms of chorea had disappeared, and the general condition of the patient was so much improved that he resumed work.

I have reported this case to contrast it with that reported by Dr. George A. Himmelsbach, in THE MEDICAL NEWS of March 12th ("An Aggravated Case of Chorea"), in which hyoscine failed utterly to give relief, and morphine proved efficient. Thus we see how futile it is to pin one's faith upon the effects of any one drug.

RETROVERSION OF THE GRAVID UTERUS IN A PRIMIPARA.

BY E. M. ALBERS, M.D., AND H. S. RAWLINGS, M.D.,
OF VICTORIA, TEXAS.

ON September 13, 1891, Dr. Albers was called to see J. S., a colored primipara, unmarried, seventeen years old. She had menstruated for the last time on about the first of May. For two months the abdomen had been enlarged, and for several weeks there had been a gradually progressive impediment to micturition and defecation. Upon inspection, a large semi-solid or fluid abdominal tumor was found extending up to or a little above the umbilicus, suggestive of a six or seven months' pregnancy, manipulation of or pressure upon which caused pain. Upon separating the labia majora a tumor was detected, presenting a cone-like termination, with an excavation in its center. The finger could be introduced between the tumor and the anterior wall of the vagina up to the symphysis. Diligent search failed to reveal the cervix. On combined rectal and vaginal examination, a tumor was found filling up the pelvic cavity, the lower part of the tumor pressing on the perineum, the upper part being beyond the reach of the finger. A catheter was introduced into the bladder, and about three or four quarts of urine withdrawn. There was no diminution in the size of the abdominal tumor, which remained as tense and unyielding as it had been. The patient was exceedingly sensitive to any pressure over the region of the abdominal tumor. No action of the bowels could now be obtained, and retention of urine necessitated the use of the catheter. The mammary areolæ were darker in color than the surrounding skin, and a drop of milk was squeezed from the breast.

The family objected to any operation, exploratory or otherwise, seemingly satisfied to let the girl die. On September 16th the patient was evidently sinking. An incision, about half an inch in length, was made in the highly congested mucous membrane of the vagina, and the engorgement was soon relieved. At once slight contractions of the vaginal tumor became manifest; and three or four hours later the girl was delivered of a fetus at about the fourth month of gestation, dying an hour later. On the following morning a post-mortem examination was made. The tumor was bound to the abdominal walls by firm adhesions. The mass proved to be the bladder, the walls of which were enormously hypertrophied. The uterus completely filled the pelvic cavity, the fundus resting on the perineum, the cervix up behind the symphysis.

The condition of the bladder accounted for the fact that the tumor did not diminish in size when the catheter was used and the cavity emptied.

NOTE ON EXCISION OF THE ELBOW.

BY WILLIAM HUNT, M.D.,
OF PHILADELPHIA.

I RISK being called an old fogy by recording the following observations. I have always been skeptical about the expediency of removing the elbow-joint for acute injury. Of course, the case might be such as unquestionably to require the operation; but such cases are rare. The strength and usefulness of the limb are much better preserved by obtaining ankylosis, say at 60 degrees, than by the flail-like union that follows excision; and if the radial movements are preserved, almost perfect use, except extension, is obtained. These remarks are founded on two cases observed through years, and my unrecorded recollections of many other cases bear out the same ideas.

Fifteen years ago a very noted and bold woman, a flying-trapeze performer, fell at one of our theaters. It was found that she had sustained a compound, comminuted fracture of the left elbow. The patient came into my wards at the Pennsylvania Hospital. The injuries were so profound as on consultation to give rise to the questions of immediate amputation or excision. The decision was with me, and I determined to pursue the conservative course. I placed the limb on a pillow in the angular position, used various dressings in the progress of the case, and removed dead fragments of bone as they presented themselves. The woman got well with ankylosis. She was wonderfully plucky, and immediately set about gaining her living in her old haunts. Last week she called on me. She said her object was to see me and renew her thanks, for she had promised herself that she would do so when she came to Philadelphia. Her particular object, besides this, was to invite me to the Dime Museum to see her perform and use her left hand.

I went; and truly her acting was wonderful: she spun and rolled and tossed all sorts of objects, balanced tables and barrels on her chin and on her feet, and in her hands, and altogether was as fine a performer in that particular line as I ever saw, or as one would wish to see. Her arms were bare to above the elbows, and I doubt whether a single person in the large audience, not acquainted with the facts, knew or suspected that there was anything the matter with her left elbow-joint. The acts also showed how few really useful or necessary movements are performed with the upper extremity in the position of extension.

It must also have been about fifteen years ago that two patients, both men, came into the Pennsylvania Hospital with compound comminuted fractures of the elbow. One fell under the care of my colleague at that time, the late lamented Dr. Richard J. Levis. He was progressive, as we all know, and promptly excised the joint of his patient, whose occupation I do not know. My man was a fireman who had sustained a very severe injury, much

worse than the other. To give an idea of it, the whole olecranon was thrown out posteriorly through a skin-laceration, and was twisted completely on its axis, so that the articular surfaces presented backward. Under ether I reduced the luxations and dressed and treated the parts as I did in the woman's case.

Both of the men recovered, and I now had an opportunity of observing them, which I did for years after. The usefulness and strength of the limbs were incomparably in favor of my patient. He returned to service in the same fire company, and may be there yet. The efforts of the other man to do any useful act with his flail-like limb were really painful to look at. The amount of bone removed by the surgeon was so great that I doubt whether the man could pursue any useful occupation for any length of time.

My advice, therefore, is for surgeons to look and think twice before they excise an acutely injured elbow-joint.

HYDRARTHROSIS OF THE KNEE-JOINT; PARACENTESIS; IRRIGATION; RECOVERY.

By W. D. JONES, M.D.,
of Rising City, Neb.

H. A., a German, thirty-two years old, of good general health, presented himself November 9, 1891, with enlargement, stiffness, and pain at the left knee-joint. About seven weeks previously, while working in the field, the outer portion of the capsule of the joint was perforated by a pitchfork in the hands of a careless fellow-laborer. The injury was followed by continuous pain and gradual and increased swelling of the joint. The circumference of the knee was twenty inches; the skin was tense and glistening, and traversed by numerous enlarged bloodvessels.

Paracentesis of the joint was antiseptically performed, and nine ounces of thin, greenish, sero-fibrinous synovial fluid removed, becoming gelatinous upon cooling. Inunctions of mercury oleate were prescribed, to be used once daily until active vesication occurred. A rubber bandage was applied, and the leg was put upon a posterior splint, with an ice-bag to the knee for twenty-four hours.

Ten days later the joint had again filled. Paracentesis was a second time antiseptically performed. The joint-cavity was irrigated with warm Thiersch's solution (salicylic acid 2 parts, boric acid 12 parts, hot water 1000 parts) until the fluid came away clear; the joint was then flushed with a 1 per cent. solution of carbolic acid; the joint was immobilized by a posterior splint, the rubber bandage and ice-bag applied as before, and the patient put to bed for a week, after which passive movement of the joint was practised once daily. The patient was allowed to take moderate exercise with the fixation-splint *in situ*. The splint was continued until the patient was dismissed, January 13, 1882.

There was then a small amount of fluid to be detected in the joint. Extension was perfect; flexion was but slightly impaired. The thickening of the capsule and of the cartilages of the joint have been gradually disappearing under the influence of massage and inunctions of mercury oleate.

MEDICAL PROGRESS.

Hysterectomy for Carcinoma of the Uterus.—Braithwaite (*British Medical Journal*, No. 1624, p. 329) reports the results in twelve cases of carcinoma of the uterus treated by complete vaginal hysterectomy and in four treated by supra-vaginal hysterectomy. Of the first group, three were living and free from recurrence of the disease at the time of report, four years, eighteen months, and ten months, respectively, after operation; one was living, free from disease, four and a half years after operation, but had been lost to observation for a year and a half; one died two years after operation, without recurrence of the disease; in two cases the uterus was profoundly involved, and death followed the operation in six months and a few months, respectively; in four cases there was fatal recurrence: four months, three months, ten weeks, and soon, respectively, after operation; one case died from acute suppurative peritonitis following the operation. Of the four cases in which supra-vaginal hysterectomy was performed, one was free from recurrence nearly five years after the operation; in two the disease recurred in seven months and two months, respectively; one case died twelve hours after the operation from shock and hemorrhage.

Transperitoneal Nephrectomy.—Heinricius (*Centralbl. f. Chirurgie*, 1892, No. 14, p. 297) reports the case of a woman, twenty-seven years old, who presented an abdominal tumor below and to the left of the umbilicus. The swelling had first been observed two years previously, when it was as large as a fist. It had subsequently increased in size, but for a year its growth had ceased. The tumor was tense and mobile. Over it, and in the left lumbar region, the percussion-note was dull. The position of the uterus was normal. On vaginal and rectal examination no connection between the tumor and the internal genitalia could be detected. The urine was clear, of a specific gravity of 1015, and contained no albumin. A diagnosis of hydronephrosis was made, and celiotomy decided upon. The colon was displaced from in front of the tumor, the peritoneum incised, and the cyst punctured. The ureter and the pedicle of the mass were secured by several double ligatures, and the kidney was removed. No cause for the abnormal condition could be found. After the operation, the quantity of urine passed gradually increased, until it reached the normal. The patient ultimately recovered.

Periodic Nocturnal Cough in Infants.—Baginsky (*Traité des Maladies des Enfants*) describes in infants a periodic nocturnal cough of obscure origin. Without apparent cause, the child is suddenly awakened during the night by violent cough, lasting from fifteen minutes to half an hour. At the conclusion of the paroxysm the infant goes to sleep again, and in the morning is bright and cheerful. Ordinarily, physical examination discloses nothing abnormal. The attacks have been ascribed to malaria, but frequently such an origin can be excluded. Most probably the condition at fault is a subacute or chronic rhino-pharyngitis, with swelling and secretion, or a bronchial catarrh, with hyperesthesia of the mucous membrane of the respiratory tract, the accumulation of mucus during sleep by irritation inducing the paroxysm.

It is thus that expectorants afford relief. In cases of malarial origin quinine is indicated. In obstinate cases small doses of morphine may be required.—*Journ. de Méd. et de Chir. prat.*, 1892, lxiii, 5, p. 192.

The Reaction of Urine with Ether.—ANDREW H. SMITH (*Lancet*, No. 3578, p. 688) has found that if urine be shaken with half its bulk of pure sulphuric ether, in most instances a gelatinous layer collects on the surface. The reaction occurs with urine that does not contain albumin or peptones, and with urine from which the phosphates have been removed. It does not occur with simple solutions of urea or of urates. From the fact that the reaction is most decided with the urine of persons of good appetite and digestion, and is usually absent after fasting or when the diet is restricted, it is thought to be indicative of an excess of nutritive material taken into the blood and excreted by the kidneys. The nature of the substance on which the reaction depends has not yet been determined, but it is thought probable that the occurrence of anuria in the course of prolonged etherization is owing to the development of the reaction in the parenchyma of the kidney.

Hydatid Cyst of the Anterior Abdominal Wall.—TREUBERG (*Deutsche medicin. Wochenschr.*, 1892, No. 14, p. 308) has reported the case of a woman, fifty years old, who, three years previously, had observed in the anterior abdominal wall, in a situation corresponding with the right iliac fossa, a small, hard tumor, of the size of a hazelnut, that at first caused no pain, but subsequently became extremely sensitive. In the previous month the swelling had become much larger and the pain more intense. The tumor was hard and moved with the abdominal wall, but it could not be determined whether it was situated above or beneath the muscular layer. It was thought to be a fibroma, and its removal was decided upon. The mass proved to be an echinococcus cyst, situated beneath the superficial fascia, as large as a goose-egg, with clear, watery contents, a lamellated capsule, and a number of translucent daughter-cysts, varying in size from that of a pinhead to that of a pea.

Myomotomy During Pregnancy.—FLAISCHLEN (*Centralbl. f. Gynäkol.*, 1892, No. 10, p. 185) has reported the case of a primigravida, thirty-two years old, in whom, in the third month of pregnancy, a firm, nodulated, movable mass, as large as a child's head, and of rapid growth, was, on examination, detected behind and attached to the uterus. Malignant disease of the ovary being suspected, celiotomy was performed and two fibromata were found, one pedunculated, the other attached to the uterus by a broad base. The growths were removed and the wounds sutured. The pregnancy progressed without interruption and at term the patient was naturally delivered of a healthy child.

Some Dangers of Lavage.—FENWICK (*Practitioner*, 1892, xlviii, 4) condemns the indiscriminate employment of lavage in every disorder of digestion, pointing out numerous complications to which the procedure may give rise. Thus there may result convulsions, tetany, syncope, and sudden death. In a case of latent ulceration, the walls of the stomach may be perforated. Hemorrhage sometimes results when there is no ulceration. The use of any but a soft-rubber tube may be attended with injury to the gastric mucous membrane. When antiseptic solutions are employed, the possibility of intoxication should be borne in mind.

THERAPEUTIC NOTES.

Conjoined Employment of Tuberculin and Tuberculocidin.—In a number of cases of advanced pulmonary tuberculosis treated by means of tuberculocidin, SPENGLER (*Deutsche medicin. Wochenschr.*, 1892, No. 14, p. 305) observed that dyspnea was relieved, hectic fever disappeared, and the pulse became regular, when the symptoms were related to the tuberculous affection. He failed, however, to observe the destructive changes so evident in superficial tuberculosis after injections of tuberculin, and which he attributes to a specific, local exudative inflammation. With the view of obtaining this specific action, together with the transudation destructive of the bacilli, ascribed by Klebs to tuberculocidin, Spengler employed injections of tuberculocidin in conjunction with injections of tuberculin. By careful dosage he succeeded, in a limited number of cases, in obtaining marvellously good results. The initial dose was from five (0.005) to twenty (0.02) milligrams of tuberculocidin, administered almost daily for a month or more, and gradually increased to from three hundred (0.3) to five hundred (0.5) milligrams; and from one-fiftieth (0.00002) to one-tenth of a milligram (0.0001) of tuberculin, administered at intervals of from one to four days, and increased to from three-tenths (0.0003) to four-fifths of a milligram (0.0008).

Solanine in Affections of the Stomach.—At a meeting of the French Academy of Medicine, DESNOS (*La Médecine Moderne*, No. 12, 1892, p. 175) reported the employment of solanine, in daily doses of from three-quarters of a grain to a grain and a half or more, in seventeen cases of painful affections of the stomach, in but four of which without success. Solanine is obtained from potatoes, and especially resides in the peel. It acts on the cord, the medulla, and the peripheral nerves, occasioning marked anesthesia. The remedy is indicated for tremor and for painful conditions.

For Hemorrhoids.—

℞.—Atropinæ sulphat. . . . gr. iv.
Acid. tannic. . . . . gr. vj.
Morphinæ sulphat. . . . gr. vj.
Cocainæ hydrochlorat. . . ʒss.
Vaselin. . . . . ʒj.

M. et ft. ung.

S.—Apply a small quantity to the hemorrhoid after each stool.

Rev. de Thér. Gén., No. 7, 1892.

For Frost-bite.—

℞.—Acid. carbolic. . . . . gr. xxiv.
Ung. plumbi } . . . āā ʒj
Lanolin. }
Ol. olivæ . . . . . ʒiv.
Ol. lavandulæ . . . . gtt. xx.

M. et ft. ung.

S.—Apply topically, with gentle friction.

LASSAR, *Berl. klin. Woch.*, No. 14.

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, APRIL 30, 1892.

THE MANAGEMENT OF FEVER.

THE vast majority of the acute diseases coming under the observation of the physician are of a febrile character, and the physician who understands well the management of fever possesses a knowledge and skill most important to his patients.

By the management of fever, we mean, as a matter of course, the management of patients with fever, and in all that is said, due allowance must be made for individual conditions and susceptibilities.

The greatest mistake that the medical attendant of a fever-patient can make, is to treat temperature. Pyrexia is but one element in the syndrome-group of the febrile process. Perversion of metabolism, diminution and arrest of secretions and excretions, are, if less obvious, equally important phenomena.

HIPPOCRATES may not have been the first to observe that the heat-phenomena of fever were often indications of Nature's method of battling with an enemy, yet the antiquity of this teaching is sufficiently evident if we give it only its common name of the Hippocratic doctrine. Not all that is old is true, as not all that is new is good, but the truth of the Hippocratic doctrine of the frequently conservative tendencies of fever-heat is becoming more and more apparent, as scientific observation in medicine replaces hap-hazard empiricism and novelty-seeking.

Nothing has so forcibly emphasized the value of this doctrine as the results of the antipyretic medication that came into such wide and unfortunate vogue with the perfection of chemical processes leading to the manufacture of kairin, antipyrin, and the other powerfully poisonous coal-tar derivatives. Even those who a few years ago most strenuously advocated the use of these agents to reduce temperature in typhoid fever and pneumonia now teach that such treatment is inefficient, though too few have had the courage to say that it is dangerous—in some cases, probably murderous. It depresses not only heat-production, but also respiration, circulation, excretion, and the functions of organic life in general. It adds drug-poisoning to disease-poisoning. Vigorous is the patient who can survive both.

Unfortunately, falsehood speeds faster than truth can overtake. The whilom honest but mistaken teaching of a few men deservedly eminent in the profession, and its blatant echoing by the host of imitators eager to gain notoriety by proclaiming from the housetops the latest novelty, have had the effect of popularizing the method of reducing temperature by powerful drugs. The fact, too, that a symptom alarming—needlessly alarming—to the friends of the patient can often be rapidly, apparently magically, made to disappear, has not been without effect in the curious complex of motives influencing the commercial medicine-man. Thus, alike those who look to the colleges and hospitals for guidance and assistance in earnest endeavors to do good to their patients; and those who seek agents of striking power in order by the impression produced to do good to themselves, have become so accustomed to give drugs to patients exhibiting high temperatures, that it is a difficult matter to bring about a return to more rational methods. Fortunately there is an indication that the novelty-seekers are about to make a fad of the cold-water treatment of typhoid fever. Though this is novel only to them, it is devoutly to be hoped that they will succeed in popularizing it. The courage and devotion of BRAND to what he knew to be right, his persistence in the face of opposition and ridicule, and despite honest criticism evoked by the blunders of timid and half-hearted followers that "would like to bathe patients without wetting them," are examples of virtues too rare in the history of medicine. Bathing reduces temperature,

it is true; but it does so by stimulating and supplementing the natural processes of thermolysis and excretion, and not by depressing normal thermogenesis. Sponging will not replace it; for there is an abstraction of abnormal heat and a soothing of abnormal nervous irritation brought about by immersion in a large volume of water, that cannot be brought about in any other manner. It has been said that there is a salutary pyrexia as well as a dangerous hyperpyrexia. These cannot be separated by an arbitrary line; but the rule of BRAND to keep the temperature of typhoid-fever patients below 102.4° F. has the good results of more than thirty years' consistent practice in its favor; the method of effecting this, it is to be remembered, being by the cold bath, not by depressing drugs; and the indication itself being derived from observation of the effect of the treatment by cold-bathing. BRAND is careful to insist that the temperature is regarded by him only as an index, and that his method of treatment combats fever—the morbid complexus, not pyrexia—the symptom.

Not less important is it to give febrile patients comparatively large draughts of water. The trained nurse does not appreciate this, though the physician may. Again and again have we been answered, "He didn't ask for it," or "All he asked for," in reply to inquiries as to the amount of water the patient was drinking. Nurses must be told to give definite quantities of water at definite intervals. Water accomplishes two desirable ends—it dilutes the poisons that enter the circulation as a result of perverted metabolism, and it mechanically facilitates the excretion of useless or toxic katabolins by the kidneys and the skin.

Diarrhea, if not excessive, is better than constipation for a patient sick with fever. In the absence of counter-indication, the bowels should be evacuated, *i. e.*, properly emptied, daily—whether spontaneously, by drug, or by enema. Diarrhea is not always a counter-indication to the administration of a suitable purge or the use of an enema; it may even indicate the necessity for such measures, for frequent ineffective efforts of the bowel to empty itself of irritative and toxic matters may be checked by removing the cause.

If a patient with fever be kept at rest, clean, plentifully supplied with fresh air, pure cold water, and small quantities of easily digested food; if his emunctories be maintained in a condition of gentle activity; if cold water be used externally in a proper manner, and when indicated; if alcohol be avoided unless definite indications for its use are present, the question of drug-giving will become subsidiary, and the nature of the medication, whether antiseptic, supporting, specific, sedative, or whatever else it may be, will necessarily vary with the etiology of the affection, the mechanical and pathologic conditions present, and the constitution or present status of the individual patient.

SNEAK-ADVERTISEMENTS.

OUR request for evidences of the work of the surreptitious advertisers has brought us unexpectedly large and highly interesting proofs of the extent to which this practice obtains. The suggestion occurs that if some extremely cute fellow would "work" this vein in a purely business way he might make a snug fortune out of the ambitious doctor by getting a few—a very few—data directly, and then doing all the rest of the business, reportorial, typographic, and ethical, himself. It may, indeed, be that such an institution is in full working-order (only men of a certain class would know of it, of course), with agents in the different cities. The duplication of despatches in different newspapers would suggest a unity of cause, quite as much as the editorial assurances, all identical in a hundred journals, concerning the "member of the amido-benzole series." These go to show that medical editors occasionally have so marvellous a unanimity of opinion that it extends to reproduction and "unconscious cerebration" of several pages of words alike in all, even down to a comma. Now, the agent of the sneak-advertisers must learn better than this, which, to a brother editor forced to glean the medical literature of the day, becomes not only stupid and repetitively tiresome, but disgustingly unimaginative. It seems to him much like "patent insides," or "patent outsides," and looks toward the final consummation of an ideal state in which the patent-medicine syndicates and secret-nostrum venders should in one city stereotype the highly scientific contributions of the medical writers employed by the stockholders, and send the printed pages to the local agents of THE MODERN DOCTOR UP TO DATE, for pseudo-issuance by them. In this way the medical editor would be freed from editorial work entirely, and he could get all the honor, and more of the profit, by thus loaning his name and auctioneering HYGEIA to the medical mob.

We have no present intention of uncovering the Pandora-box in which the modest hobgoblins of our scrap-book try to hide. We only wished to notify some of our kind correspondents that it is only the sly dodges of the regular physician—that is "in good standing," "a member of such and such reputable medical societies, etc.," that we wish to obtain proofs of. For obvious reasons, we have now nothing to do with the out-and-out quacks. Their affair must be settled by legislation of the whole country. They have the merit of frankness and of what the prize-fighters would call courage. It is the double-faced fellows we are after—those who secretly import into medicine the morals and practices of the ward politician, whilst pretending to belong to a craft that detests such actions. Will not correspondents also give the date and the name of journal from which the scraps are taken?

THE SAMUEL D. GROSS MONUMENT FUND.

In another column will be found a circular issued by the committee appointed by the American Surgical Association to secure funds for the erection of a monument to Samuel David Gross. Utilitarians may object that a pathologic laboratory or other medical foundation would be a more fitting memorial to such a man than sculptured brass can be. Those who know what inspiration there was in his living presence, even though he opened not his lips, will not share so narrow a view. Let all who tread the streets of the Capital City see reproduced in enduring bronze the noble figure and the finely chiselled face, and ask, "Who was this man?" Let them be told, "It is he who re-created American medical literature, who made American surgery famous, and American medical teaching fruitful; who won from the Old World honor for the science and learning of the physicians of the New World; and who taught his pupils not alone the arts, but the dignity of their profession."

Let them learn of his life and his work and let them thus learn what it means to be a true physician. And let us, too, of the profession he loved, draw comfort and inspiration from the sight. Especially in these latter days of respectable quackery, let the Gross Monument mutely tell all who enter the ranks of medicine that lofty ideals will lead to the highest success, and that one need not sully his conscience to win the rewards that the community and the profession richly shower upon those who prove in all things deserving.

SELECTION.

REGULATION OF DISPENSARY PRACTICE.

This subject has received considerable editorial attention from the *Lancet-Clinic*, and were it not for a step which has been taken toward the solution of the question, we would feel much hesitancy in again bringing this subject before our readers. Serious consideration devoted to this subject is time well spent, because the evil is constantly growing, and each year assumes a more threatening aspect. Something must be done to regulate this business or there will be a deep, yawning chasm full of bad feeling existing between the profession at large and the medical colleges. The arguments in favor of some regulation are so well known that a repetition is superfluous.

By chance we heard the other day that the Ophthalmic Hospital had taken a step in this matter, and in order to satisfy ourselves we obtained the following slip, which explains itself:

Ophthalmic Hospital and Dispensary, Cincinnati, O.

It has been suggested that you are not a proper subject for treatment in this hospital. This institution is for those in poverty and distress *only*, and it will be necessary for you to furnish evidence on this blank from some responsible party that you are a proper person for the recipiency of its charity.

(Signed) ————————

Executive Officer, Ophthalmic Hospital.

Date, ————, 189—.

————— is known to me to be worthy of the charity offered by the above institution.

(Signed) ————————

It seems to us that this is a long step in advance, and one that might be adopted by all the dispensaries without detriment to their attendance, but with decided benefit to the medical profession in general.

In fact, we believe the medical men of the city have a right to demand that some such step be taken by all medical institutions which treat patients free of charge. Promiscuous charity is unjust, unwise, and injurious; it gives rise to imposition, dishonesty, and fraud; therefore, the dispensaries should see to it that, so far as possible, none but the poor receive gratuitous medical attention.

The plan outlined above has the merit of simplicity, and yet it is effectual. The slips can readily be kept on file for future reference, and thus become permanent records. No deserving person need be without medical attention, and yet the medical profession can protect itself against fraud and deception.

In order to render the plan as successful as possible, it is necessary for all dispensaries to adopt the same plan and coöperate in the matter. Thus may we stamp out the most gigantic evil connected with medical practice.—*The Cincinnati Lancet-Clinic.*

A New Italian Pharmacopeia has just been completed.

HISTORICAL.

FOUR LETTERS OF DR. BENJAMIN RUSH.

(*Presented by* GUY HINSDALE, M.D., *to the College of Physicians of Philadelphia.*)

VERY few original letters by Dr. Benjamin Rush are extant, excepting among the Rush memorials preserved in the Ridgway Branch of the Philadelphia Library. The College of Physicians, of which he was one of the founders, possesses, as far as I can find, only one letter; there are none in the University of Pennsylvania, in which he was a professor.

It is needless to reiterate the greatness of Rush. We all know that he was one of the foremost men of his time, a signer of the Declaration of Independence, and the founder of scientific medicine in America.

The following letters from Rush were written to a former student of his, and it was very interesting to me to find the identical letters, to which these are answers, still preserved among the Rush archives in the Philadelphia Library:

PHILADELPHIA, August 24th, 1811.

DEAR SIR: Ancient history informs us that a certain great conqueror, after having planned schemes for subduing several of his neighboring nations, was asked what he intended to do afterward. "Sit down," said he, "and enjoy life." Why can't you do that now? said his friend. You say you are a partner in a business which brings in between 7 & 8000 dollars a year. What can you expect or wish for beyond that income after all the supposed spoils in knowledge which the battles and hospitals of Spain & Portugal might afford you? Sit down *now*, my friend. Enjoy the establishment God has given you and be thankful and happy.

Were your situation less agreeable, and your business less respectable, I would advise you against your contemplated enterprise. The practice of Surgery in the British hospitals I believe is altogether empirical. Much as you would see there, you would probably learn but little. Besides you would be considered by the British Surgeons as an interloper, and probably be treated by them with neglect or contempt, for it is now a part of the British national character to hate an American. Your notes of Dr. Physick's lectures probably contain more knowledge than you would acquire even under the most favourable circumstances in which you could visit the present theatre of war, in the course of two or three years.

All your communications upon medical subjects afford me pleasure. Adieu!

Health, respect & friendship
from, Dear Sir, yours truly,
BENJ'N RUSH.

DR. STUART.

PHILADELPHIA, May 24th, 1810.

DEAR SIR: Since my settlement in Philad'a I have known a great number of Cancer-doctors who have for a while succeeded in curing cancerous sores, but who have uniformly depreciated in character & fortune from their numerous failures or from a return of the sores which were said to have been cured by them. I have observed further that most of those Cancer-doctors pretend to have obtained their remedies from the Indians of our Country, and that they consist wholly of vegetables. The improbability of this being the case appears, from Cancers being unknown among the Indians, and from so small a number of vegetables retaining a corrosive or strongly irritating power when they are dry. I suspect arsenic to be the basis of all those Cancer powders which do not destroy sound as well as morbid flesh. It was the active medicine in the late Dr. Martin's powder, although he pretended it was obtained from a root which grew only in the neighborhood of Pittsburg.

Should you *succeed* in the cure of cancers by the remedy you have mentioned, you would derive but a small profit from your labors, for a majority of the persons afflicted with them are poor people. Should you *fail* in all, or most cases, you would lose the fair & respectable character you have gained by your extensive education and honourable graduation in medicine.

With best wishes for your health and prosperity, I am, Dear Sir,

Yours very respectfully,
BENJ'N RUSH.

DR. STUART.

[ADDRESS] DR. JOSEPHUS B. STUART,
Physician,
Albany,
State of New York.

DEAR SIR: The fact you mention in your letter relative to the effect of stopping the ears with a watch in your mouth, is an interesting one, but it does not call in question the opinion taught in our University. The communication of sound is probably through the medium of the *solid* matters upon which the watch rests, and the seat of hearing. In this way, you know, not only sounds but words have been conveyed to the ear thro' the medium not only of the bones of the head, but the upper and lower extremities in persons who have been deprived of their hearing.

I have salivated your friend Mr. Winans, & thereby I hope put him into a situation to be benefitted by travelling during the summer.

From, Dear Sir,
Yours very respectfully,
BENJ'N RUSH.

PHILADELPHIA, July 4th, 1809.

P. S.: My best wishes & comp'ts to your preceptor.

PHILADELPHIA, June 22d, 1809.

DEAR SIR: An unusual hurry of business has prevented my answering your interesting and sensible letter on an earlier day.

Your treatment of Dr. Willard's case was judicious. The remains of his disease will, I hope, yield to moderately depleting, and tonic remedies according to the *state* of his *pulse*. Plasters of shoemakers' wax to the feet often do great service in diseases of the head. Garlic is a powerful medicine in vertigo *after* the reduction of the pulse. Coffee should not be tasted by him. An issue in his arm may be useful.

The case of Hydrocephalus described in your letter is a curious one. I fear medicine can do nothing for it.

I thank you for the fact respecting the extension of the sense of touch.

I am much gratified in finding that you comprehend my principles, and that you have dared to adopt them in your practice. An edition of Dr. Sydenham with notes will be sent to the press in a few days by,

Dear Sir,

Your sincere friend,

BENJ'N RUSH.

P. S.: Dr. Woodhouse died of Apoplexy. It came on with Hemiplegia. He was ill but five days. A successor to him will be appointed on the 3d of July. The candidates are Dr. Seybert, Dr. Cox, and Mr. Robert Hare.

[ADDRESS] DR. JOSEPHUS BRADNER STUART,
Physician,
Albany,
State of New York.

On referring to the original letters of Dr. Stuart, I find that the case mentioned in the preceding letter was one of cerebral embolism. The most active measures were employed, and it will be interesting, I am sure, to relate the plan of treatment adopted during the first week. Laudanum and ether were given internally; the areas of numbness were rubbed with tincture of cantharides; a blister was applied to the back of the neck; the feet were bathed and sinapisms were applied to them; half an ounce of alkaline julep was administered frequently by the mouth; a blister was applied to the temple for numbness and another to the cheek. After the feet had been blistered by the sinapisms the patient was bled to the extent of six ounces; after this he was given 100 grains of rhubarb and 60 grains of sal tartar. A little brandy and a little porter were also administered, but the record says that they both disagreed. Despite all this the patient is reported to have passed a tolerable night; "took in the course of it 60 grains of calomel." Mercurial ointment was also rubbed in his thighs and under his arms. Brandy and laudanum were again administered.

Static electricity was employed and sparks were drawn from the numb parts; "bled eight ounces;" 35 drops of laudanum administered; niter, aloes, and calomel were added to the long list. Poor Dr. Willard! No wonder he proved a rebellious patient. It seems almost incredible that within a single week so much should have been administered, and that he bore it all as well as he did.

Dr. Stuart[1] was a famous surgeon in Albany and enjoyed a practice of the highest order. The case of hydrocephalus, in reference to which Dr. Rush gives an unfavorable opinion, had been operated upon in those days. It appears that the head measured 39 inches in the eye and ear line, and that Dr. Cussam, of New York, "made an incision down to the brain," without result.

Referring to Dr. Rush's strong advocacy of bleeding and purging, measures which he adopted, and in defence of which he fought fearlessly amid the most bitter opposition, Dr. Stuart says: "I am rallied by the physicians of this city for supporting the principles which you teach in your lectures." Rush's independence in thought, word, and deed, the discovery of principles in his practice, and his defence of them, were truly heroic, and he lived to see them adopted by hundreds of students who flocked to him for instruction; for in days of opposition he had written:

"I had resolved to stick to my principles, my practice, and my patients to the last extremity."

[1] A member of Dr. Stuart's family presented the letters to Dr. Hinsdale.

CORRESPONDENCE.

CASTRATION AS A SUBSTITUTE FOR CAPITAL PUNISHMENT.

To the Editor of THE MEDICAL NEWS,

SIR: At the last regular meeting of the New York Society of Medical Jurisprudence, held at the Academy of Medicine on Monday evening, March 14th, General William A. Hammond, M.D., of Washington, read a paper entitled, "A New Substitute for Capital Punishment, and Means for Preventing the Propagation of Criminals" (*vide* THE MEDICAL NEWS, April 2, 1892, page 390).

Castration is not a *new substitute*, because it has been advocated since the year 1731 (*vide Medical Times and Gazette*, May 25, 1872). Dr. G. F. French, June 11, 1878, read before the Maine Medical Association a paper, entitled, "The Eradication of Syphilis and Crime by the Extirpation, in that Class, of the Procreative Power."

Dr. Orpheus Evarts read before the Cincinnati Academy of Medicine, February 27, 1888, a concise, complete paper entitled "Asexualization as a Penalty for Crime."

Castration is now a live practical topic in large cities. Social science is at present a "fad." Poverty must be abolished. Large families are the cause. What's the remedy? Castrate the husband or the wife. Let us have the ideal Malthusian marriage. Then war, pestilence, and famine will not be needed to remove the overplus of population. Among married American people one child is the rule. Abortion has hitherto been the remedy. Let us give castration a trial. Let us be progressive. Onanism, sodomy, fornication, polygamy, polyandry, abortion, have had their day. The time is now ripe for something new—for castration.

H. A. SHELLEY, M.D.

319 E. 120TH STREET, NEW YORK CITY.

THE PRESCRIPTION OF PROPRIETARY PREPARATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: I wish to emphasize the appeal made to the Editor of THE MEDICAL NEWS in the last paragraph of the letter of Dr. Walker (THE MEDICAL NEWS, April 9th), that we expose worthless nostrums, so many of which are being daily prescribed by so many physicians. It is a growing shame to the medical profession that this habit of prescribing lactopeptin and almost all of the proprietary preparations that are now flooding the country is on the increase, and to an alarming extent.

We know that the bulk of the people of the world are constantly looking for something new, and that there is a great temptation to gratify that inordinate thirst, and that this is done and will continue to be done *ad infinitum;* but let it be done by those that are least responsible and whom the least dishonor can follow. But, for the sake of our high and worthy calling, let not such a disgrace be chargeable to the medical profession.

W. H. BARR, M.D.

AGRICULTURAL COLLEGE, MISS.

THE ACTION OF THE SERRATUS MAGNUS IN FRACTURED CLAVICLE.

To the Editor of THE MEDICAL NEWS,

SIR: When I wrote my article on "Fractured Clavicle," published in your issue of April 9th, I believed that I was original in calling attention to the importance of the action of the serratus magnus in producing and maintaining the displacement of the fragments. Since then, I find that Prof. Gordon had written to the same effect in 1859 (*Dublin Quarterly*), and that without knowing Prof. Gordon's views, Dr. John H. Packard, of Philadelphia, had advanced the same idea in his "Notes on Fractures of the Upper Extremity," in the *New York Medical Journal* for November, 1866, and also in Ashhurst's *Cyclopedia of Surgery* (vol. iv, p. 101). Yet neither Hamilton nor Stimson speak of this, which I believe to be of greater importance than any of the other factors usually mentioned.

Yours truly, EDWARD S. STEVENS.

CINCINNATI, OHIO.

REVIEWS.

THE MÜTTER LECTURES ON SURGICAL PATHOLOGY. (Delivered before the College of Physicians of Philadelphia, 1890–91.) By ROSWELL PARK, A.M., M.D., Professor of Surgery, Medical Department University of Buffalo; Surgeon to the Buffalo General Hospital; Fellow of the German Congress of Surgeons, etc. Reprinted from the *Annals of Surgery*, vols. xiii, xiv, and xv.

THE writer had the opportunity of hearing the lectures of Professor Park, and was at the time struck by the patient and extensive research and noteworthy erudition which they embodied—a ransacking, if we may be pardoned the term, of the literature and researches of modern times, with condensation of the work of the older pathologists. This impression is now deepened by a more careful reading. It is impossible in a review to consider all the subjects with which the volume deals; there are, however, some of sufficient rareness to be worthy of mention here. The study of pus, and of infective processes, with the study of the varying forms of infection up to date, is replete with useful information, as is also the consideration of thrombi. Dr. Park considers clots formed in the circulation—that is, in the blood in transit—as thrombi, a statement undoubtedly open to criticism.

While considering the pyogenic organisms, the author divides them into the obligate and facultative, a division that may have some value. Pus is differentiated into pus, pyoid or puruloid, and archepyon or "originally pus." While there may be some reason for so considering a product of cell-activity combined with processes of degeneration, it is not to us entirely apparent. It may be feared that this proposed method of nomenclature will add to the existing confusion of names, and that really nothing in the matter of actual knowledge is thereby gained. It would, perhaps, be as proper to call urine something else than urine because it contained albumin at one time, or sugar at another, or peptones at another. Microscopically, there are seemingly identical forms of pus, in which the cause may be something else than organisms, certainly differing forms of organisms. We believe that pus may be produced by any cause that has the power of exciting inflammation and at the same time producing degenerative processes in the inflammatory products. This is suggested by Professor Park in the case of some of the alkaloids, and why not in other chemical products? For this reason, if for no other, it does not seem wise to confuse our knowledge of suppuration by attempting to modify the nomenclature of descriptive terms.

For the present, at least, it is highly advisable that we should retain the simplest possible terms for designating the products of the various inflammatory processes, as the comprehension by the profession at large of modern processes in pathology has been vastly retarded, or rendered almost impossible, by the confusion of names of great length, born from the fertile subjects of bacteriology and infective processes.

Lecture IV contains a very fair and scientific classification of the "Results of the Absorption of Products of Wound-infection." In this there are suggested: 1. Surgical fever. 2. Intestinal toxemia. 3. Sapremia. 4. Septicemia. 5. Pyemia. These terms are all sufficiently well known to need no further exposition except that Professor Park has cleared up some of the cloudiest points and clearly and concisely defined each of the conditions named. It seems that under the second condition, intestinal toxemia, there might be also considered similar toxemias occurring in the genito-urinary tract. Thus we all well know there is a well-defined and well-marked course of symptoms that may go with or follow decomposition or retention of catarrhal inflammatory products in the genito-urinary tract. If Professor Park could suggest a term that would cover all such forms of sepsis due to disturbances in the equilibrium of absorption and excretion, he would very much simplify the teaching upon this subject.

The technique for the examination of antiseptics and relative antiseptic values is most excellent. The results of the examination of pyoktanin are presented in such a manner as to be an example of the best methods. Its antiseptic value has, as pointed out by Professor Park, practically been demonstated to be *nil*. The lectures upon Tetany, Actinomycosis, Tuberculosis, and the various infective processes are quite full and up to date. There is a natural tendency in taking up a book for us to make suggestions of what should have been or what might have been added to advantage, but in bacteriology, which forms an important feature in this course of lectures, one cannot fail to note the absence of any illustrations. It is to be hoped that when these lectures have reached a second edition illustrations will be inserted, for thereby the value of the work to the student, to the laboratory worker, and to the teaching surgeon, to whom it must be of the greatest value, will be greatly enhanced.

DISEASES OF THE BLADDER AND PROSTATE. By HAL C. WYMAN, M.Sc., M.D., Professor of Surgery in the Michigan College of Medicine and Surgery, Detroit, etc. Detroit, Mich.: George S. Davis, 1891.

THIS work reflects no credit upon author or publisher. It is likely to do less good than harm. The book is an affront to the profession to which it is offered. No

excuse will mitigate its errors and crudities. We reproduce portions of the book selected at random. The muscular coat of the bladder is described as "made of non-striated muscle-fibers running in all directions around its cavity." In one sentence we find "epididimitis" and "epididymus." Elsewhere micturition is spoken of as "phenomena." It is directed that "the patient should be laid upon a table for examination." For emphasis, perhaps, it is said that "both hands should be used in a bimanual examination." We are told that "the curves possessed by catheters and sounds are adapted to the curve in the male urethra, where it enters and passes through the perineum." Calculi or foreign bodies in the bladder are to "be recognized by their mobility and a peculiar tickling and clicking sound." Examination of the bladder, it is said, among other things, should be "oral" and "aural." "To make" an operation is spoken of. "Whiskey before the anesthetic is administered in quantities sufficient to produce a moderate degree of intoxication lessens the dangers from shock" is, to say the least, an equivocal recommendation. In the report of a case of gunshot injury of the bladder, it is said that the "wounds were closed with interrupted sutures after the Lambert method." The "symphisis" pubis, and "the frog blooded condition of the human system" are mentioned. "A 5 per cent. solution of carbolic acid" is recommended as "a better and safer" local anesthetic than cocaine "to numb the urethra." Among the "sources of inflammation" of the bladder one is said to be "microörganic."

Die Krankheiten der Athem-Organe. Mit specieller Rücksicht auf Japan bearbeitet. Von Dr. E. Baelz, Professor der klinischen Medicin an der Kaiserl. Universität zu Tokio. Mit einem Titelbild in Farbendruck und zahlreichen Holzschnitten. Pp. x, 812. Tokio, 1890.

Diseases of the Respiratory Organs. With Special Reference to Japan. By Dr. E. Baelz.

The three parts that make up this volume evidently represent but one section of a complete handbook of special pathology and treatment, with particular reference to Japan. The necessity for such a work, the first of its kind, lies in the fact that disease in Japan does not present precisely the same features as disease in Europe or America, and that diseases that exist in the one part of the world are wanting in the other. Dr. Baelz is a German, who for fifteen years has been a teacher of clinical medicine in the Royal University at Tokio. In the arrangement of the subject-matter he has adopted an innovation that commends itself for its usefulness. Each main division is introduced by a presentation of the clinical anatomy and physiology of the various parts; then follows a consideration of the general diagnosis and of the general treatment; and finally the individual affections are taken up in the usual manner. Especial attention has been paid to the climatology of Japan. A number of comparative annotations are of interest. It is stated that, except in certain localities in which the disease is endemic, acquired and hereditary syphilis is less common in Japan than in many European countries. While it is admitted that non-infectious membranous laryngitis may arise, as from the inhalation or application of irritants, a distinction between croup and diphtheria is not made. Post-diphtheritic palsy is said to be less common in Japan than in Europe. Among the modes of treatment intubation is considered. Investigations demonstrate that the lungs of the Japanese have a greater vital capacity than those of Europeans. It is thought that the difference may be due to differences in diet, as carbohydrates or albuminoids predominate. In connection with its relation to deformities of the chest, it is said that rhachitis is practically unknown in Japan. In physical examination, palpatory percussion or percutory palpation is recommended for the determination of fine differences in resonance. A gentle blow is struck upon the applied finger of one hand with two or three fingers of the other hand flexed at the second phalangeal joint, the fingers being permitted to remain in contact for a few seconds. It is best to proceed from more to less resonant areas. Dr. Baelz is unqualified in his condemnation of the indiscriminate sending of patients to climatic resorts, as calculated to do as much harm as good. A form of hemoptysis dependent upon the presence in the lungs of the ova of a nematode worm, the *distoma pulmonale*, is stated to be of frequent occurrence in Japan. The condition was first described by Baelz in 1878. In two cases of hemoptysis it is recorded that filaria sanguinis hominis were found. Pneumonia seems to be relatively uncommon, though less so now than formerly. Pleurisy, on the contrary, is more common than in Europe. How well the literature has been covered is evidenced by the fact that the diagrammatic representation of the generation of râles in DaCosta's *Diagnosis* has been reproduced and properly credited.

Dr. Baelz has succeeded in preparing a work that will not only prove most valuable to Japanese students and practitioners, but that can also be read with advantage by medical men in all countries who desire to be informed in the various phases of medical knowledge. The arrangement of the subject-matter is most heartily to be indorsed and commends itself for more general adoption.

Massage and the Original Swedish Movements: Their Application to Various Diseases of the Body. (Lectures before the Training Schools for Nurses connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, Philadelphia Lying-in Charity Hospital, and the Kensington Hospital for Women, of Philadelphia.) By Kurre W. Ostrom, from the Royal University of Upsala, Sweden, Instructor in Massage and Swedish Movements in the Philadelphia Polyclinic, etc. Second edition, enlarged. With eighty-seven illustrations. Philadelphia: P. Blakiston & Co., 1891.

This little book contains a brief description of the so-called Swedish movements, and of the various manipulations employed in the practice of massage, together with the indications and contra-indications for therapeutic application. The work will prove especially useful to those pursuing courses of instruction in the subjects treated of. The text is generously illustrated. We notice that in one place massage of the stomach is spoken of as "massage of the ventricle."

THE MEDITERRANEAN SHORES OF AMERICA; OR, THE CLIMATIC, PHYSICAL, AND METEOROLOGICAL CONDITIONS OF SOUTHERN CALIFORNIA. By P. C. REMONDINO, M.D. Illustrated with forty-five engravings and two double-page maps. Pp. 160. Philadelphia: The F. A. Davis Co., 1892.

THE author has prepared this book as a short guide or abridged handbook for persons seeking information of a practical character respecting the climates of Southern California. He shows that this region has fully as varied a climatology as that of the North of Italy, having six distinct classes of climate, each of them having an individual therapeutic value and application. Physicians will find the work helpful when seeking information relative to a suitable climatology for their patients on the so-called "Mediterranean Shores of America."

HUMAN MONSTROSITIES. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania, and GEORGE A. PIERSOL, M.D., Professor of Histology and Embryology in the University of Pennsylvania. Part II. Illustrated with thirteen photographic reproductions and twenty-five woodcuts. Philadelphia: Lea Brothers & Co., 1892.

THE second volume of this most excellent work contains, in text, descriptions of Celosoma, a form of monstrosity with a more or less extensive body-cleft with eventration, associated with various anomalies of the extremities, of the genito-urinary apparatus, of the intestinal tract, and even of the whole trunk. Six varieties are described, viz.: Aspalasoma (1 plate), Agenosoma, Cyllosoma, Schistosoma (1 plate), Pleurosoma, and Celosoma. Exencephalus (2 plates), Pseudencephalus (5 plates), and Anencephalus (4 plates) are also described, the first class being divided into subspecies—Iniencephalus, Exencephalus, Notencephalus, Proencephalus, Podencephalus, and Hyperencephalus.

INFLUENZA: ITS HISTORY, ETIOLOGY, PATHOLOGY, DIAGNOSIS, COMPLICATIONS, AND TREATMENT. By CHARLES H. MERZ, A.M., M.D. Pp. 96. Sandusky, O.: L. J. Beecher & Co., 1892.

IT is stated that "This little treatise has been written for the purpose of bringing together the latest and best ideas concerning influenza." The subject is certainly an important one and worthy of most careful study. The brochure before us considers in a general way the various features of influenza, but in a manner entirely inadequate to the magnitude of the task.

THE MICROSCOPE AND HISTOLOGY. For the Use of Laboratory Students in the Anatomical Department of Cornell University. By SIMON HENRY GAGE, Associate Professor of Physiology. Part I.: The Microscope and Microscopical Methods. Third edition, entirely rewritten. Pp. 96. Illustrated. Ithaca, N. Y.: Andrus & Church, 1891.

As indicated, this book has been written for laboratory students. It is thoroughly practical in scope and will prove a valuable adjunct in teaching the principles that govern the employment of the microscope, as well as in demonstrating the application of these principles. There is but one way of acquiring a knowledge of the working as well as skill in the use of the microscope, and that is by persevering application. The acquisition of such knowledge and skill may be rendered easy by intelligent direction. It is for this that the book under review commends itself. It is essentially a students' book, from which the most good is to be derived by performing the various manipulations that it directs. It admirably fulfils the objects for which it was written.

SYPHILIS IN ANCIENT AND PREHISTORIC TIMES. By F. BURET, M.D. Translated from the French, with Notes, by A. H. OHMANN-DUMESNIL, M.D., of St. Louis. In three volumes. Vol. I. Philadelphia: F. A. Davis, 1891.

IN translating Dr. Buret's ransackings of history as regards syphilis, Dr. Ohmann-Dumesnil has done an excellent service for the English reader. The numerous quotations throw lurid gleams of light upon the social conditions of ancient peoples, and certainly give proofs of a widespread existence and ancient origin of the disease.

NEWS ITEMS.

A Monument to the late Samuel David Gross, M.D., LL.D., D.C.L. Oxon., LL.D. Cantab., LL.D. Edin., LL.D. Univ. Penna., etc.—American medicine and surgery has had no abler exponent than Samuel David Gross! There has been no man in our profession more honored by scientific associations and learned institutions, both abroad and at home, than Dr. Gross; none who have been more admired by their fellow-practitioners, or revered by former pupils. A boy of studious habits, ambitious promptings, integrity of purpose, and purity of character, without the prestige of a name, or the influence of family or fortune, he rose, unaided, to the highest position in the profession of his selection. A man of marked personal character, with great acquirements, he made an impress upon American surgery which has served to dignify American medicine. His long and brilliant record of deeds well done has claimed the admiration of the world; and since he has passed away and his life-work gone into history, his friends and admirers have been inspired to erect to his memory such a monument as will commemorate his life and character. To further this most praiseworthy object, the American Surgical Association, at its last session, adopted the following resolution:

"*Resolved*, That the President be empowered to appoint a committee with authority to confer with the friends and admirers of the late Prof. Samuel D. Gross, and with the *profession at large*, for the initiation of a movement on the part of the Association, having for its object the erection of a monument to Dr. Gross in the city of Washington, D. C."

The subjoined committee from the Association has been appointed, with authority to confer with the *profession at large*, and solicit subscriptions.

It is not the purpose of the American Surgical Association to claim the honor of erecting this monument to the memory of one of its most distinguished Fellows; but rather is its intention to *initiate* a movement in

which the entire American profession should feel an equal interest; because Dr. Gross was of no exclusive faction, but a leading member of the whole profession.

Hence it is that each member of the committee is instructed to appoint sub-committees in his own State, irrespective of fellowship in this or any other association, which sub-committees will aid him in the collection of contributions to the general fund.

Any contributions may be sent to Dr. John B. Roberts, 1627 Walnut Street, Philadelphia. He is the Treasurer of the Association, and will receipt for the same, and from time to time acknowledge subscriptions through the columns of the *Journal* of the American Medical Association. In the event of a failure to collect a sum sufficient to complete the monument, the contributions will all be returned to the subscribers.

Estimates have been made of the amount required to erect an imposing statue of bronze, of heroic size, upon a granite pedestal, the whole to be about sixteen feet in height; all to be delivered to the committee in the city of Washington, showing that the cost will not exceed $12,000. It will probably be less.

Some admiring friends of the late Prof. Gross have authorized us, on behalf of the committee, to draw upon them, at sight, for $3500, at any time that the money may be required to make up the estimated amount. This sum will be increased by other friends who feel an interest in the matter, if necessary.

With this amount, *now assured*, it will be necessary for the committee to raise by subscription not more than $8000, or possibly $8500, a very small sum to be drawn from the whole of the United States, when we consider the object for which it is intended.

J. R. Weist, M.D., Chairman.
C. H. Mastin, M.D., Secretary.

Committee.—Drs. Wm. T. Briggs, Tennessee; Levi C. Lane, California; Solon Marks, Wisconsin; L. S. Pilcher, New York; A. Vander Veer, New York; James McCann, Pennsylvania; D. Hayes Agnew, Pennsylvania; J. Ewing Mears, Pennsylvania; S. H. Weeks, Maine; Hunter McGuire, Virginia; L. McLane Tiffany, Maryland; N. P. Dandridge, Ohio; H. H. Mudd, Missouri; J. Collins Warren, Massachusetts; B. A. Watson, New Jersey; D. W. Yandell, Kentucky; N. Senn, Illinois; Charles B. Nancrede, Michigan; W. H. Carmalt, Connecticut.

The Association of American Physicians will hold its next annual meeting in the Medical Museum and Library, Washington, D. C., May 24, 25, and 26, 1892.

The subject selected for discussion is Dysentery. Dr. Wm. T. Councilman, as Referee, will consider the Etiology and Pathology, and Dr. A. Brayton Ball, as Co-referee, the Symptomatology, Complications and Treatment.

The following members will present papers:

Dr. Henry M. Lyman, "The President's Address."

Dr. Charles Carey, "The Production of Tubular Breathing in Consolidation and Other Conditions of the Lungs."

Dr. Samuel C. Chew, (Title to be announced).

Dr. William C. Dabney, "A Contribution to the Study of Hepatic Abscess."

Dr. I. N. Danforth, "Tube-casts and their Diagnostic Value."

Dr. George M. Garland, "The Treatment of Follicular Tonsillitis."

Dr. Heneage Gibbes, "The Morbid Anatomy of Leprosy."

Dr. Hobart A. Hare, "A Collective Investigation in regard to the Value of Quinine in Malarial Hematuria or Malarial Hemoglobinuria."

Dr. Jacobi, (Title to be announced).

Dr. W. W. Johnston, "Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation."

Dr. Thomas S. Latimer, "Alcoholism."

Dr. Morris J. Lewis, "A Study of the Seasonal Relations of Chorea and Rheumatism for a Period of Fifteen Years."

Dr. Morris Longstreth, (Title to be announced).

Dr. Francis T. Miles, "A Case presenting the Symptoms of Landry's Paralysis, with Recovery."

Dr. William Pepper, "Report of a Case of Glanders, with the Results of Bacteriological Study."

Dr. T. Mitchell Prudden, (Title to be announced).

Dr. George M. Sternberg, "Practical Results of Bacteriological Researches."

Dr. Charles G. Stockton, "Misconceptions and Misnomers Revealed by Modern Gastric Research."

Dr. William H. Thompson, "The Significance of Intermission in Functional Nervous Diseases."

Dr. Victor C. Vaughan, "Certain Toxicogenic Germs found in Drinking-water."

Dr. B. F. Westbrook, "Studies in Hypnotism."

Dr. James C. Wilson, "Pulsating Pleural Effusions."

Dr. George Wilkins, "The Cold-water Treatment of Typhoid Fever."

American Academy of Medicine. *Preliminary Program.*—The following topics are promised for discussion at the Seventeenth Annual Meeting of the American Academy of Medicine, at the Cadillac Hotel, Detroit, Mich., on Saturday, June 4, and Monday, June 6, 1892:

1. "Essentials and Non-essentials in Medical Education;" the Address of the retiring President, Dr. P. S. Conner, of Cincinnati. 2. "The Value of the General Preparatory Training afforded by the College, as compared with the Special Preparatory Work suggested by the Medical School in the Preliminary Education of the Physician;" a paper by Dr. T. F. Moses, of Urbana, Ohio. 3. "Does a Classical Course Enable a Student to Shorten the Period of Professional Study?" a paper by Dr. V. C. Vaughan, of Ann Arbor, Mich. 4. "The Value of a College Degree as an Evidence of Fitness for the Study of Medicine;" a paper by Dr. L. H. Mettler, of Chicago. 5. "The Value of Academical Training Preparatory to the Study of Medicine;" a symposium, by Drs. H. B. Allyn, of Philadelphia, W. D. Bidwell, of Washington, and Elbert Wing, of Chicago. 6. "The Newer Medical Education in the United States;" a symposium, by Drs. W. J. Herdman, of Ann Arbor, Charles Jewett, of Brooklyn, and Elbert Wing, of Chicago. 7. A paper on "Some Phases of the State Supervision of the Practice of Medicine," by Perry H. Millard, of St. Paul. Some other papers are partially promised, and the usual reports may be expected from the committees. Members of the profession are cordially invited to be present at the sessions of the Academy.

The Suppression of Empiricism.—The following ordinance has been passed in Bowling Green, Lexington, Paducah, Harrodsburg, Lebanon, Elizabethtown, Stanford, Franklin, Glasgow, and several other cities, and is pending and will be passed in nearly every other city and town in the State of Kentucky:

SEC. 1. That it shall be unlawful for any travelling or itinerant doctor to practise medicine in any of its branches within the limits of this city. To open an office for such purpose, or to announce to the public in any other way an intention to practise medicine shall be an offence within the meaning of this ordinance. *Provided*, that nothing in this ordinance shall be so construed as to prohibit any reputable physician or surgeon from any other place being called to see a particular case or family, or to do a particular surgical operation in said city.

SEC. 2. Any person convicted of a violation of the provisions of Section 1, of this ordinance, shall be fined the sum of not less than $50 nor more than $100 for each day so engaged in the practice of medicine.

SEC. 3. This ordinance shall be in effect from and after its passage, and all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

New York Presbyterian Hospital.—The following staff of officers was appointed April 12th:

Special Consultants: Gynecologist, Dr. T. G. Thomas; Neurologist, Dr. M. Allen Starr; Laryngologist, Dr. F. H. Bosworth; Ophthalmologist, Dr. C. S. Bull; Otologist, Dr. A. H. Buck; Orthopedist, Dr. N. M. Shaffer; Dermatologist, Dr. George T. Jackson; Surgeon, Dr. Fred. E. Lange.

Visiting Physicians: Dr. F. P. Kinnicutt, Dr. Wm. P. Northrup, and Dr. W. B. James.

House Staff—to go on duty July 1, 1892:

Medical: Second Assistant Physician, Dr. F. H. McMasters; Third Assistant Physician, Dr. David Bovaird, Jr.

Surgical: Second Assistant Surgeon, Dr. Ernest Schultze; Third Assistant Surgeon, Dr. Ed. H. Pershing.

No. 2—to go on duty January 1, 1893:

Third Assistant Surgeon, Dr. R. Forbes Hawkes; Third Assistant Physician, Dr. J. P. Thornly.

A Bureau of Service and Information for Physicians at the Columbian Exposition.—Chas. Truax, Greene & Co., an enterprising physicians' supplies house of Chicago, announces that during the Columbian Exposition it will establish and maintain a bureau of service and information for medical men. Provision will be made for registration, the reception of mail-matter and telegrams, the transaction of banking, and information will be furnished as to hotels and boarding-houses and other matters of interest and importance to visitors. A cloak-room, a reading-room, a reception-room, and other conveniences will also be provided.

Alvarenga Prize—The Hufeland Society of Berlin offers a prize of eight hundred marks ($200) for the best essay upon "Basedow's Disease: Its History, its Pathology and Pathologic Anatomy, its Etiology, its Treatment." Essays in competition should be in the hands of Professor Liebreich, of Berlin, before April 1, 1893.

A Correction.—THE MEDICAL NEWS has allowed itself to be misled into an inaccurate statement, for which it owes an apology to its readers, to itself, and to a good cause that it might have damaged by a bad argument.

"As a matter of fact, a reliable preparation of theobromine sodio-salicylate" can *not* be obtained for less than $1.75 per ounce, av.; the price of diuretin (Knoll) is $2.50 per ounce, av. There is a difference, but not so great as we erroneously stated.

The American Electro-therapeutic Association will hold its second annual meeting in the New York Academy of Medicine, October 4, 5, and 6, 1892.

BOOKS AND PAMPHLETS RECEIVED.

Psycho-therapeutics; or, Treatment by Hypnotism and Suggestion. By C. Lloyd Tuckey, M.D. Third Edition, Revised and Enlarged. London: Ballière, Tindall & Cox, 1891.

Tobacco, Insanity, and Nervousness. By L. Bremer, M.D. Pamphlet, 1892.

Aphasia due to Sub-dural Hemorrhage without External Signs of Injury. By L. Bremer, M.D., and N. B. Corson, M.D. Reprint, 1892.

The New Lake in the Desert. By William A. Edwards, M.D. Reprint, 1892.

Concerning American Indian Womanhood. An Ethnological Study. By William Thornton Parker, M.D. Reprint, 1892.

Lectures on Tumors. By John B. Hamilton, M.D., LL.D. For the Use of Students. Second Edition. Detroit, Mich.: George S. Davis, 1892.

Accidents from the Electric Current. By Philip Coombs Knapp, A.M., M.D. Reprint, 1892.

Two Cases of Trephining for Traumatic Epilepsy. By Philip Coombs Knapp, A.M., M.D., and Abner Post, M.D. Reprint, 1892.

A Case of Tumor of the Cerebellum, etc. By Philip Coombs Knapp, A.M., M.D. Reprint, 1892.

Astasia-abasia, with Report of a Case. By Philip Coombs Knapp, A.M., M.D. Reprint, 1892.

Mme. Lachapelle, Midwife. By Hunter Robb, M D. Reprint, 1892.

Rupture of the Sac of an Extra-uterine Pregnancy, etc. By Hunter Robb, M.D. Reprint, 1892.

Die Krankheiten der Athem-organe. Mit specieller Rücksicht auf Japan bearbeitet. Von Dr. E. Baelz. Tokio, 1890, 1891.

Surgical Operations. By Horace Packard, M.D. Report for the Year 1891, with a Report of a Third Series of Abdominal Operations, Comprising Sixty-seven Cases. Pamphlet, illustrated. Montpelier, Vt.: Argus and Patriot Printing-house, 1892.

Transactions of the Louisiana State Medical Society, Twelfth Annual Session, 1891. New Orleans: Graham & Son, 1892.

A Treatise on Bright's Disease of the Kidneys: Its Pathology, Diagnosis, and Treatment. By Henry B. Millard, M.A., M.D. Third Edition, revised and enlarged. New York: William Wood & Co., 1892.

When is Embryotomy Justifiable? By T. Ridgway Barker, M.D. Reprint, 1892.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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PHILADELPHIA.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

ECLAMPSIA.

BY W. A. DEWOLF SMITH, M.D.,
OF NEW WESTMINSTER, B. C.

ON December 27, 1890, I was called to see Mrs. M., who was supposed to be in labor. On arriving at the house I found that the patient, who was a young primipara, had had sharp pains for some hours before my visit. As they appeared to be merely false pains, I prescribed suitable remedies and left her. I heard nothing more of the case until January 15, 1891, when I was again summoned to see her on the supposition that labor had begun. At this visit I found the patient suffering from the same pains as before, but in addition there was great edema of the feet, legs, and vulva, so that she was unable to stand, walk, or to sit in an ordinary position. I prescribed calomel and jalap, and punctured the vulva in several places with a fine needle. On my visit next morning I found that the pains had ceased and the swelling of the vulva had much decreased. The feet and legs were about as large as on my previous visit, the ankles measuring 10½ inches in circumference. On that evening, at about 6 o'clock, I was again hurriedly sent for, the messenger stating that the woman was in a fit. When I arrived at the house the convulsion had passed off, and had left the woman in a state of semi-unconsciousness. Shortly after my arrival she had another convulsion, at the beginning of which I injected ¼ grain of morphine hypodermatically; but this not acting rapidly enough, I began the administration of chloroform by inhalation, which at once cut the convulsion short, the patient again subsiding into the semi-unconscious state.

I now secured a consultation with Drs. Walker and Fagan, and there being a large (about 30) per cent. of albumin in the urine, and the convulsions recurring at intervals of about twenty minutes, necessitating the almost constant use of chloroform to keep them under control, we decided to empty the uterus at once.

The convulsions began in the hands, usually the left hand, then extended to the right, and finally spread to the body and face, the latter being frightfully distorted, the mouth being drawn up on the left side. During a convulsion the breathing was jerky, and at the end of a seizure ceased altogether, so that artificial respiration had to be resorted to after each attack. The frequent employment of enemata of chloral, bromide, and milk with whiskey, quieted the patient somewhat, but she was evidently getting weaker after each attack, so that after putting her completely under chloroform I dilated the os with the fingers, and turned and delivered without difficulty a dead child—a male, and rather small. After delivery there was absolutely no hemorrhage, the uterus contracting firmly and remaining so. No douching was employed. After the birth of the child the woman had no more convulsions, merely becoming a little restless from time to time.

The pulse being weak and flickering, she was ordered small doses of milk and whiskey every hour until the next day, when the milk was increased to two ounces with a teaspoonful of whiskey every hour, and this was afterward changed to three ounces of milk every hour, with a tablespoonful of whiskey every three hours.

From this time the case progressed favorably; the urine, although of a dark color, being passed voluntarily, and the albumin decreasing in amount from day to day. It was not until the third day after delivery that the patient regained her senses, although previously she would answer when spoken to loudly.

She was on the 18th put upon liquor ferri dialysati with infusum digitalis, with the result that in a few days the swelling of the feet and ankles entirely disappeared. On the twelfth day after delivery the albumin disappeared from the urine. It reappeared occasionally for the next five or six days, when it finally disappeared. When the patient was allowed to get up she was put on a mixture containing the citrate of iron, quinine, and strychnine, and has made a good recovery.

The temperature never rose above 99.5°, and on the fourth day after confinement fell to normal, where it afterward remained. The lochia presented no unusual feature; on one occasion there was a little unpleasant smell, but a carbolized douche set it quite right again. For some days there was considerable distention of the abdomen, with tenderness and pain, which, however, yielded to turpentine stupes.

Causes. The causes of puerperal convulsions are by no means certain, and all authors seem to feel the uncertainty of the ground. Churchill(1) says that "they doubtless arise from the sympathy of the brain with the irritation of some different and often distant organ—it may be the uterus, the stomach, or the bowels." He also gives as causes, intemperance in eating or drinking, mental emotions and frights, efforts made during the labor-pains whereby an accumulation of blood takes place in the head, and atmospheric influences. The possibility of the kidneys being in any way implicated as a cause does not seem to have occurred to observers of that time, although a little further on he mentions(2) the fact

that Dr. Levis, of London, had detected the presence of albumin in the urine of such patients, and deems it an important test in doubtful cases.

Playfair ([3]) states that although the urinary origin of eclampsia has been pretty generally accepted, more recent observations have tended to throw doubt on its essential dependence on this as a cause, and he mentions the researches of Braun and Frerichs, who supported the view that the convulsions were due to the retention of urea in the blood (although Frerichs believed it to be decomposed into ammonium carbonate), and those of Hammond ([4]) and Spiegelberg ([5]), who opposed this view.

Later on it was shown that albumin in the urine did not necessarily mean puerperal convulsions, and cases to prove this were collected by Goubeyre, Blot, and Braxton Hicks ([6]). Traube and Rosenstein referred the occurrence of eclampsia to acute cerebral anemia with edema, due to changes occurring in the blood during pregnancy ([7]).

MacDonald ([8]) found anemia of the brain, but no edema.

Dr. A. F. King ([9]) proposes the theory that the eclampsia is due to the pressure of the uterus on the great vessels (aorta and inferior vena cava), which causes both the cerebral and renal troubles.

Dr. A. L. Smith ([10]) has arrived at the conclusion that the cause is uremic, and that the convulsions depend on edema and anemia of the brain.

In a paper read before the Gynecological Society of Chicago, Dr. W. W. Jaggard ([11]) favors the view that the convulsions are caused by cerebral anemia, which in its turn is caused by vasomotor spasm.

Dr. Bayard Holmes ([12]) believes in the bacterial origin of puerperal eclampsia, the bacteria finding an entrance through the intestinal tract.

A new theory of the cause of puerperal eclampsia —or rather, as the author puts it, of a form of eclampsia puerperalis—is that advanced by Mr. W. T. Coleman ([13]), which is that at least one form of the disease is due to the sudden and forcible extension, and consequently stretching, of the cervix uteri —independently of the presence of albumin. He relates three cases—one of which proved fatal—occurring in his own practice, in which convulsions supervened on the sudden distention of the cervix. In at least two of his cases there was no albuminuria after delivery, and no signs indicating it before that event. This must, however, be a very infrequent cause, for in many cases the convulsions occur either before or after any occasion for stretching of the os, and in most cases in which convulsions occurred during delivery no mention is made of the fact that the passage of the head in any way increased the tendency to eclampsia. In this connection the question occurs to one, whether the tremblings so often seen during the first stage of labor, which are entirely beyond the control of the patient, and are not due to any apparent cause, such as fear or cold, may be due to such stretching of the os, and whether in the cases mentioned by Mr. Coleman, the eclampsia was but an exaggerated form of these nervous tremblings.

Galabin ([14]) is of the opinion that the cause is uremic, and requires further proof before he can accept the view of Dr. Braun, that bacilli are the immediate cause of the convulsions.

Recent German writers have put forward the idea that "the fetus may play a not unimportant part in the causation of the convulsions, as indicated by the predisposition to convulsions in twin and triplet pregnancies, and by the fatal effect on the child, and by the fact that the death of the child during pregnancy materially lessens the danger to the mother." (Winckel).

Dr. Robert Barnes ([15]) rejects the idea that of necessity there is any disease of the kidneys, or that albuminuria is the cause, but considers that the immediate cause of the convulsion is some poison—as yet not definitely known—circulating in the blood. This condition is not the sole cause, but a certain proportion of the result is due to the increased nervous and vascular tension, which in its turn is associated with the hypertrophy of the heart normally taking place during pregnancy.

As already stated, Churchill ([16]) observes that "atmospheric influence appears to have some effect in determining the frequency of the disease. Most persons must have remarked how often a number of cases occur about the same time, as though depending on some general cause." What relation this remark, made in 1848, may have to the proposition enunciated by Dr. Bayard Holmes, in 1889 ([17]), *i. e.*, that bacteria are the cause of the disease, is left for others to determine. The weight of opinion seems to be that the eclampsia is caused by some poison circulating in the blood, but the nature of the poison and the relation it bears to the albuminuria is not yet settled.

Symptoms. The symptoms of an approaching attack of eclampsia are in many cases not sufficiently striking to attract any attention to themselves until the disease is actually *en evidence.* In a few cases there have been warnings, such as restlessness, nervousness, headaches, and loss of sight, but they are by no means constant or distinctive, while even albuminuria and edema are not at all to be relied upon as symptoms, for both or either may be present in a case that does not develop convulsions, or convulsions may be present in a case in which there is neither albuminuria or edema.

Pathology. The pathology of the disease is not more definitely settled than is the cause. In some

cases there have apparently been found changes in the kidneys indicative of nephritis, whilst in others these have been wanting altogether. In some cases changes have been observed in the liver by certain German and French observers. Thus Paultauf and Kundrat, in 1888, and Koffer and Kundrat, in 1891 ([18]), report cases in which hemorrhagic hepatitis was found. Papillon and Audain ([19]) also found multiple ecchymoses beneath the capsule of the liver, while microscopically there was fatty degeneration of the liver-cells, with multiple thromboses of the venous radicles, and infiltration with masses of fibrin. Dr. Schmorl, of Leipzig ([20]), in fifteen cases found necrotic foci in the liver, which he divided into hemorrhagic and anemic. The same observer has also found hemorrhages of the brain in most of his cases, and in five of the fifteen there was necrosis of the pancreas and heart. M. Doleris ([21]) found that some specimens of urine from patients dying with eclampsia yielded certain crystals of an indeterminate nature, a solution of which caused death when injected into rats and sparrows. He also found changes in the livers of these patients.

Occurrence. Puerperal eclampsia appears to be slightly more frequent among primiparæ than among those who have borne more than one child. Thus, in fifty-six cases that I have collected, the number of pregnancies is mentioned in forty-seven, and of these, twenty-six, or over 55 per cent., were primiparæ, the remainder having borne from two to nine children. The cases that I have been able to collect do not bear out the theory that eclampsia is more frequent in plural than in single births, for of the fifty-six cases four only are mentioned as cases of twins.

Prognosis. Puerperal eclampsia is an extremely fatal disease, both to mother and child. Of fifty-six mothers, fifteen, or nearly 28 per cent., died, while of thirty-five children regarding which the fact is mentioned, eighteen, or nearly 52 per cent., were dead.

Complications. Besides coma, which is an almost constant accompaniment of the disease, and which is doubtless really a part of it, complications are not frequent. Hemiplegia occurred four times in the fifty-six cases; icterus is mentioned twice; ptosis (of the left eyelid), mania, and purpura, once each. By far the greater number of cases that do recover appear to do so rapidly and completely as soon as the cause of the disease is removed.

Treatment. As regards the treatment of puerperal eclampsia there is no unanimity of opinion. Bleeding, which is one of the oldest remedies, still has its supporters([22]), while others ([23]) do not appear favorable to it. Steele ([24]) and Barnes ([25]) occupy a judicious mean, and intimate that it may or may not be useful, Barnes recommending it in selected cases.

Other remedies that meet with more general acceptance are chloral hydrate and potassium bromide, which have been highly recommended, but in many cases are found to fail.([26]). These remedies are usually combined with purgatives, diaphoretics, and diuretics. Morphine alone, or with chloral or atropine, has been highly recommended, particularly by Alban ([27]) and Teevan ([28]), who regard it as almost a specific. Oxygen has been tried ([29]), and is said to have acted well, but has not come into general use. Pilocarpine and antipyrin have their advocates also, but the use of neither has met with much success. Pilocarpine, particularly, I consider unsafe in these cases. In the case recorded I administered one dose of it, but it caused the secretion of so much saliva that in her semi-comatose condition the woman was nearly choked. Amyl nitrite has been recommended in this disease by observers who believe that the anemia of the brain is caused by vasomotor spasm, and Barnes has seen good results from its use. A few German observers have advocated Cæsarean section in these cases, but without advancing any arguments which seem to me convincing. Thus, Halbertsma ([30]) has collected ten cases of eclampsia treated by Cæsarean section, with two deaths, or 20 per cent., against a mortality of 17 per cent. in twenty cases treated by narcotics and warm baths. It is also recommended by Löhlein ([31]), and Swiecicki ([32]) and Von Herff ([33]) each record a case, the former losing both mother and child, the latter saving both. The operation is advised by Halbertsma in severe cases when some time must elapse before labor can occur; by Löhlein, when dilatation is not sufficiently advanced to permit delivery, when the child lives and is vigorous, while other treatment fails to subdue the convulsions, and respiration and heart-action are threatened. Swiecicki and Von Herff admit it to be called for only when the child lives and the genital canal is entirely undilated. These indications are, in my opinion, satisfactorily met by the course of treatment recommended by the majority of English and American authorities, viz., the administration of chloroform and rapid delivery. For cases in which convulsions occur before delivery, this treatment is usually satisfactory, and in the majority of cases in which convulsions occur after delivery they are mild in character and can be controlled by chloral and bromide administered by the mouth or by enema. Even in cases reported by writers who recommend bleeding, chloral and bromide, or morphine, it is almost invariably recorded that chloroform was given and the uterus emptied as soon as possible. In some cases of convulsions after delivery it has been necessary to resort to chloroform to control the spasms. This line of treatment is not universally recommended, for

Churchill[34] says: "I believe there is no dispute that until labor sets in naturally interference would be injurious, so that in convulsions during gestation we have nothing to do with the uterus, but must confine ourselves to the treatment of the convulsive disease." Playfair is scarcely less emphatic on the subject, for he says[35]: "If, therefore, the os be undilated, and labor have not begun, no active means to induce it should be adopted, although the membranes may be ruptured with advantage, since that procedure tends to no irritation. Forcible dilatation of the os, and especially turning, are strongly contra-indicated." Other authorities—as Ramsbotham, Gooch, and, more recently, Barnes[36]—recommend early emptying of the uterus, and the weight of modern opinion is in favor of this procedure as fulfilling all indications. Certainly, it seems that, as pregnancy appears in some way to be the cause of the eclampsia, the most rational method of treating the disease is by removing its cause, rather than to temporarily subdue the symptoms and leave the cause to continue in action.

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GONORRHEA OF THE VESICULÆ SEMINALES (SPERMATO-CYSTITIS).

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FOR several years I have watched the effect of gonorrhea in a number of European countries and in the United States. I have learned some pertinent facts relative to gonorrhea and also to syphilis. One fact is that gonorrhea and syphilis vary much in different great cities. I saw also that occasionally where gonorrhea was the most virulent, there syphilis was the most mild. For example, gonorrhea in Birmingham, England, is almost malignant in its virulence, while syphilis is quite mild. In fact, syphilis is so mild in Birmingham that the surgeons are accustomed to say, when a severe case presents itself to them, that it is not Birmingham syphilis, but that all severe cases of syphilis were acquired in other cities. On the other hand, syphilis is very severe in Edinburgh, while gonorrhea is of a mild type. So that gonorrhea varies in its intensity in various places just as many other diseases are likely to do. Another subject of interest is the effect of gonorrhea of the *vesiculæ seminales*. I have made an investigation on the subject of the semen sacs of some of the lower animals. I did some work on the dog and boar, but especially on the bull. While dissecting the semen sacs of those animals I was impressed with the regularity of the sacs. They had no irregular dilatations, no loculi or sacculated swellings. The vesicles in those animals had a uniform shape, and I never found them bound down by old or recent adhesions. In fact I never once found an inflammation in the semen sacs of the lower animals. I had dissected the semen sacs of man for some time, and the idea of the great difference between the healthy appearance of the semen sacs of animals and those of man came into my mind. I followed this subject for several years as time and occasion presented, especially in instruction in anatomy. I noticed that the majority of male subjects of dissection had some old inflammatory trouble in the seminal vesicles. These unhealthy semen sacs are not regular. Their walls bulge out here and there in a sacculated condition; their loculi are not uniform, and their walls are thinner at some places than others.

The vesicles are bound down by partial or complete adhesions, and it requires a long time to free

the sacs from the mass of inflammatory products. Now, when these old inflammations exist with distinctive prominences, and we find the seminal vesicles in a solid mass, gonorrhea can be traced with pretty fair certainty. Such men have had gonorrhea for years. In 1884 I listened to the teachings of the Germans at Berlin, but heard nothing of gonorrhea of the seminal vesicles. In 1887 I was profoundly impressed with the grand teaching and work of Professor Ultzmann, and also of Professor Dittel. I watched those men perform autopsies, from the glans penis to the top of the bladder, but I did not hear any discussion of the diseases of the vesiculæ seminales. They did not even speak of any old inflammation of the semen sacs as the result of gonorrhea. They continually spoke of *prostatitis*. When patients died and the genito-urinary tract was slit open, the appearance of the walls of the prostate and its size did not always satisfy me that all the pain of which those patients complained during life could be accounted for by that kind of a prostate. Some of those very prostates were even very respectable in appearance. To be sure, they had an immoral history, but that does not always condemn them to prostatitis. I was also sure that the back of those "condemned prostates" looked sufficiently large. I felt convinced that some of the prostatitis was nothing more than inflammation of the seminal vesicles. But when one thinks differently from able men like Professor Ultzmann or Professor Dittel he is apt to say it was an error, and that such men are always right, or at least a different idea will have a poor show of being correct. As a gynecologist I do not lay any particular claim to knowledge of other fields, but in gynecology I have had innumerable opportunities to know full well that gonorrhea is a terrible scourge to the Fallopian tubes of women, but it does not limit itself to the tubes. The coccus of gonorrhea has no respect for the tubes of tender girls or elder matrons, but ruins all alike.

Gonorrhea soon makes a pyosalpinx, which often ends as a hydrosalpinx. Not everyone will believe that a pyosalpinx may finally end as a hydrosalpinx. Now, the vesiculæ seminales and vasa deferentia are the exact analogues of the Fallopian tubes. And, so far, there has been presented no good reason why the gonococcus should jump from the prostate to the testicle without cultivating the very arable lands intermediate. The choice soil of the gonococcus is mucous membrane, and hence the vesiculæ seminales and vasa deferentia cannot escape when the germs go over its nourishing ground. Two years ago I could find no publications on the subject of gonorrhea in the semen sacs, and I began to believe that my idea of gonorrhea in those vesicles was of no value.

About a year ago I made a visit to Birmingham, England, and while there I met two men who had also done some work on the subject. One was Mr. Jordan Lloyd and the other was Mr. Marsh. This renewed my interest in the subject, and I investigated it further with those men. I wrote several short articles on it, but never heard a single comment on it. It was as if they had never been written. Mr. Lloyd told me I was the first man he had met who believed it was a matter of importance. Mr. Marsh had done some good work on the subject, and I examined some patients of his in which we believed the disease was inflammation of the seminal vesicles. One patient whom I examined showed no supra-pubic pain, no tenderness in the perineum. The *prostate was not enlarged* as we examined it per rectum, nor was it painful; but on either side of the rectum, a little higher up, a globular swelling, exquisitively tender and painful when touched, was felt. This swelling was the seminal vesicles and surrounding tissue. His temperature was 100.9°. His bowels were constipated, and when they acted they caused him intense pain. As time went on, the man improved. The seminal vesicles became smaller by absorption, but the sacs remained somewhat enlarged and thickened. This was a typical case of spermato-cystitis. Gonorrhea could be traced in most of the cases with certainty.

Mr. Jordan Lloyd had done extensive work in the subject, and I was much delighted to meet a man pursuing the same thought. In dissecting, I had not preserved my specimens, but Mr. Lloyd had saved his, and showed me dozens he had collected of diseases of the seminal vesicles. In fact, he had dissected scores of bladders and prostates in his investigations of the matter. After my dissections of the seminal vesicles of animals and men in Toledo and Chicago, and examination of clinical cases as they arose, and the work of Mr. Marsh, but especially of Mr. Lloyd, I am thoroughly convinced that the prostate gland is not responsible for all the ills put upon it. I feel quite sure now that when a man gets disturbance at the neck of the bladder it must not always be put down as *prostatitis*, but spermato-cystitis has a share in the disease. Of course, gonorrhea is at the bottom of the inflammation of the seminal vesicles. Now, the Fallopian tubes dilate and suppurate from gonorrhea, or the disease may remain as chronic endo-salpingitis for a long time.

No observing medical man doubts that orchitis follows gonorrhea. Few men will doubt that gonorrhea does not cause suppurating testicle. Now, I claim that gonorrhea causes inflammation and *suppuration* of the seminal vesicles.

Mr. Jordan Lloyd reported to me several typical

cases of inflammation of the seminal vesicles, and they suppurated and he opened the abscesses.

Dr. A. Goldspohn, of Chicago, reported to me that he had a very distinct case in which the seminal vesicles suppurated. Dr. Goldspohn told me that his case of spermato-cystitis was positively and clearly traced to an attack of gonorrhea. Dr. Goldspohn opened the suppurating semen sacs through the perineum and the man recovered. I suggest that abscess of the seminal vesicles should always be opened through the perineum and not the rectum.

No doubt others could report similar cases. But prostatitis has so long been the scapegoat of all disease at the neck of the bladder that it is difficult to change medical opinion.

A post-mortem I performed last week with Dr. Sutherland renewed my interest in this disease. The autopsy was on a man about thirty-five, of good physique. Close to the base of the bladder we noticed some swelling, and on the swelling being dissected out it proved to be two enormously dilated semen sacs. One sac was three inches long, three-quarters of an inch wide, and one-half inch thick. The other seminal vesicle was not quite so large, but nearly so. In this case I wished to be certain whether gonorrhea had caused the trouble, so Dr. J. L. Sutherland, of Grand Island, Neb., kindly undertook a careful examination of the contents. He found the gonococcus. To confirm his diagnosis, Dr. Sutherland took the specimen to Dr. Wesener, a microscopic expert of Chicago, who, without knowing anything of the case, at once pronounced it the gonococcus. Dr. Wesener said it was a specimen of old standing because the gonococcus had broken out of the pus-cell. This, then, is a typical case of spermato-cystitis which went on to suppuration. It was caused by the gonococcus. The semen sacs had not ruptured, nor had they formed many strong adhesions.

I could adduce much more evidence in favor of the distinct existence of spermato-cystitis, but I will conclude by a short, concise summary which will embody the ideas I have obtained during the past three years. When I started I could find no publication on the subject. In fact, I did not know what name to apply to the disease. Also, three years ago I had no idea that gonorrhea was such a terrible scourge to woman and man as it really is. But a study of my cases of gonorrhea was then impressing me with its magnitude, and I should think that gonorrhea caused *nearly all* spermato-cystitides.

We, of course, have *hydro-spermatocysts* and *pyo-spermatocysts*, but these are simply different stages of the same process. A pyo-spermatocyst may end in a hydro-spermatocyst.

CONCLUSIONS.

1. The seminal vesicles are attacked by inflammation that induces obstruction and causes dilatation.
2. The dilated sacs contain fluids or pus.
3. Gonorrhea is the principal cause of the disease.
4. The disease of the semen sacs is exactly analogous to those of the Fallopian tubes, and mainly has the same cause.
5. It follows urethritis and generally exists with epididymitis.
6. It rarely suppurates. But epididymitis also rarely suppurates.
7. It is nearly always diagnosticated as prostatitis.
8. If suppuration occurs, the abscess should be opened, not through the rectum but through the perineum.
9. The vesiculæ seminales may be swollen quite large and yet few adhesions exist around them, as I have seen in autopsies. But this exactly resembles hydrosalpinx. Adhesions vary much in both diseases.
10. A hydro-spermatocyst or a pyo-spermatocyst may recover without medical or surgical interference, just as will a hydrosalpinx or pyosalpinx.
11. To diagnosticate disease of the vesiculæ seminales an examination should be made by the rectum.
12. It is in the semen sacs that we likely have a favorable place for persistent remains of gonorrhea. Post-nuptial sexual excesses reëxcite old gonorrhea into virulent activity.
13. The dilatation of the semen sacs and their inability to retract, or loss of sphincter power, may account for some cases of spermatorrhea.

ORIGINAL ADDRESSES.

THE ETIOLOGY, DIAGNOSIS, AND TREATMENT OF THE PREVALENT EPIDEMIC OF QUACKERY.

An Address delivered by Invitation of the Faculty of the Medical Department of the Buffalo University, before the Graduating Class, May 3, 1892.

BY GEORGE M. GOULD, M.D.,
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You have all heard of the doctor who would never eat roast duck because this impolite animal had always been so personally insulting to him in its remarks. Doubtless you may wonder if I am not also a bit impertinent in choosing the subject of quackery as a theme of talk before physicians regularly educated and presumably despising irregularity and sectarian medicine with just indignation. I assure you it is not because I suspect you of infidelity—at least of a very pronounced type. I simply wish to give you a hint of the difficulties and temptations you will encounter when, as physicians loyal

to science and modest self-respect—no science, you know, without unselfishness and modesty—you come in sharp contact with the evils of modern sham medicine. The temptation to compromise will then come with subtle but decided force. I said I would not suspect you of positive infidelity, but as science always consists in finer discriminations and the recognitions of small differences that escape ordinary observation, so, with civilization, is coming the influx of a thousand grades of deception and fraud.

The question is always suggested: How much of a quack is he? You may have no doubt about Sharp & Co.'s Safe Cure, the seventh daughter of the seventh daughter, or the pictured old man leering at you from the theatrical bulletin boards with Mephisto grin as he lovingly clasps to his arms a bottle of sarsaparilla. But how is it with the very great and the very regular Dr. Supersuspect, who writes puffs of secret proprietary preparations, or who praises one especial brand of wine—after receiving a fine case of "samples"—as a sure cure for influenza. How about Dr. Slydog, who fills his reception-rooms with hospital dummies, or who makes his patients come many times for the relief of a simple ailment, that if cured at once would result in too small a bill—or, who tells them all their symptoms are very serious, but that he has caught the disease just in time? Are these gentlemen quacks?

Dear old John Phœnix complained that our use of adjectives was entirely too vague. If a man were called good, he wanted to know just exactly how good you thought him. If "Sally who lives in our alley" should be called beautiful, is that the only adjective that could be applied to Helen of Troy? John, therefore, proposed to prefix a number to each adjective that should indicate just the degree of perfection desired. If in your calm and dispassionate opinion, Sally is as beautiful as Helen, then you would call her 100 beautiful, though perhaps your friends might think her only 25 beautiful. If we apply the principle to quacks, we have excellent results that will enable us to ticket them with a fair degree of accuracy. For instance, take the street-corner man who sells Wizard Oil with negro-minstrel accompaniment and four white stallions; he gathers a lot of money from the crowd and then drives off at a gallop; he is evidently a 100 quack, pure and simple. Take Keeley next: in order not to exaggerate, let us put him at 98 or 99. Then the Hahnemannian Knights, according to the degree of their medical education and the weakness of their potentizations, may be ranged from 95 to 75. The metaphysical Healers, being sincere but ignorant, should find their level at 80 or 70 perhaps. Where must we put the "vivopaths," the "physio-medicals," the "bio-chemicals," the "manupaths," and all the motley crowd, unnameable, indescribable? Where should we grade the cunning fellows that are clinging desperately to the coat-tails of respectability and medicine, but who are neither respectable nor medical, except in externals? Surely not under 50. Where shall be placed the fellows who receive "presents" from drug-stores and instrument-makers, who write therapeutic articles on drugs that they know nothing about, or run dispensaries as feeders for the private office? Can they come nearer than 25? Then the "brilliant-operation" men whom the newspaper reporters so easily fool, the college professors and hangers-on, who in blowing the collegiate horn pianissimo, opportunely emphasize the note of their own private and personal trombone fortissimo! In all such cases the individual conscience must decide.

Quackery may be likened to a poor artificial eye—everybody else can see through it except the patient. Strange beyond all strangeness is the gullibility of the patient—his devotion to his duper. *Populus vult decipi*—which being modernized means, the mob loves humbug.

But however disgusting, the fact is explainable. The deep-seated grudge and suspicion of the populace for scientific medicine and the secret love with which it turns toward its magic-mongering humbuggers is evolutionally but a survival of the time when medicine was nothing but magic—an atavistic return to primitive modes of thought and therapeutic superstition. And it is also profoundly pathetic—an appallingly serious fact. The scientific student of sociology watches the inrooting of institutional weeds and fruitless brush that the future civilization must grub out and burn with costly labor and sacrifice. The student of heredity and psychology sees the hardening of modes of thought and habit that must bring only pain, or misapplied or useless function. The sincere physician sees disease permeating unborn babes, and scientific progress crippled and unutilized by reason of popular perversity.

But a further explanation of the peculiar and rejuvenated power of modern medical charlatanism consists in the fact that it is not only a survival of half-extinguished medieval fires, flaming up with temporary and dying brilliancy, it is also a "combine" with modern civilized money-making and unscrupulous politics. It is not only an atavism, it is also an avatarism—present-day cupidity is engrafting itself upon ancient superstition—a marriage of medieval magic mummery and money-making so that the sly cunning of the politician uses the stupid monkey's paw to pull the chestnuts of profit out of the fire of human suffering.

Nowhere else is this fact so certainly seen as in the history and actual outworkings of that consummate example of civilized quackery called Homeopathy. An hour's study of Hahnemann's works would convince any convincible person that this sorry specimen of nineteenth-century medievalism is a disgrace to civilization; and yet it is fashionable. Laughed out of Europe, it has sought and found a home among Americans, infinitely receptive of every form of opera bouffe whimsicality and rampant rascality. If its lay adherents had the faintest conception of the hideous absurdities on which it is built, and the trickery by which it lives, they would be sickened with disgust. The distinctive principles that make it differ from scientific medicine are the following delectable Hahnemannian hocus-pocuses:

1. The cause of human disease is either the "miasm" of sycosis, of syphilis, or in overwhelming proportion, the itch.[1] With marvellous inconsistency, however, the

[1] It is sometimes said that no man could have been so asinine as to ascribe to the itch such profound powers, but using Hahnemann's own words, as quoted by that most excellent writer, Prof. Nathan Jacobson, of Syracuse (Journal of the American Medical Association, March 5, 1890), psora is the only real fundamental cause and source of all the other countless forms of disease figuring as peculiar and definite diseases in books on pathology under the names of nervous debility, hysteria, hypochondriasis, mania,

origin of all disease is held to be beyond the discovery of the human mind, supernatural, hyperphysical, a disturbance of our "dynamis" or soul life. Diagnosis of disease is, therefore, impossible, and thus the very first requisite of cure, the knowlege of the cause of morbid conditions is declared incomprehensible and scorned.

2. The more you weaken or dilute a drug, the stronger it becomes. Hahnemann's own words are: "A homeopathic dose is augmented by increasing the quantity of fluid in which the medicine is dissolved." Oliver Wendell Holmes, who has tried to drown this pestiferous sect with logic and laughter for a quarter of a century, calculates the oceans of water in which a grain of medicine must be dissolved in order to "potentize" it to suit Hahnemann. Mathematically, the thirtieth "potentization" would require a body of water equal in amount to 480,769 worlds the size of our own in which to dilute a physiologic dose of medicine. Hahnemann himself could not get it "thin enough," and so finally gave all medicine by the nose, by "olfaction," or smelling. And yet medicine so thin as this has effects that only a madman would dream of ascribing to it. A purely inert powder like lycopodium, administered in unimaginably minute doses, will, according to Hahnemann, produce 1608 distinct symptoms, covering a period of fifty days. One-millionth of a millionth of a millionth of a grain of common table-salt produced 1349 symptoms, including headache, vomiting, cardiac and lung troubles, disturbance of sight, hearing, and so on.

The method of potentization is by shaking. Hahnemann would not advise above two shakings for fear of making the dose too strong. The great apostle of homeopathy, Lutze, in an address that has reached at least forty-two editions, says that an old man was cured of persistent vomiting by means of a glass of water that Lutze had magnetized by simply holding it in his right hand.[1]

3. To cure a disease, give a medicine that in a well person would cause the disease, or something as near to it as possible—that is the holy nonsense of *similia similibus curantur*. By a grain of a drug diluted in millions of oceans of water, you are supposed to substitute a drug-disease for the natural disease; and the "instinctive vital force" will turn and "go for" the natural disease, because the vital force has, as it were, been made mad and spurred on by the drug-disease.[1]

It is worthy of this lunatic medicine that, reeking with medievalism, it should claim to be the "new school," and call "old school" that system which, by instruments of precision, bacteriology, experimental research, and a hundred scientific methods of which no homeopathist ever originally dreamed, is endeavoring to cure and prevent disease. It is worthy of this new school that it should pretend to practise Hahnemannism, while secretly using any medicinal agents and in physiologic doses. Made according to Hahnemann's theories, made as it is to-day pretended they are made, one could harmlessly eat a stomachful of their sugar pellets, supposed to be deadliest poison.

Not an instrument of precision, not a bacillus, not a ptomaïne or leucomaïne, not a single measure of genuine therapeutics or experimental research, not a single discovery of the thousands that make up the body of modern scientific medical truth and power, not one, not one was ever discovered by a homeopath. Their greatest discovery I know of is that the human iris, by its tints and fleckings and colors, denotes the parts and the particular ailments or wounds of the patient's body diseased or injured.[2] I have the recent catalogue of a homeopathic drug-store in New York, in which, to-day, among thousands of filthy things, or rather names of things offered for sale, are the following "morbific products, nosodes," etc., offered in high potencies:

"Lice insects," either of the three varieties: "serpents," "tarantulas," and "crickets." You can buy bottled sunlight, nay, the sun himself; or you have the choice of the blue rays, the yellow rays, bottled galvanism, or faradic electricity, etc. "Snow" and "ice," or "moonlight," or the "east wind," are at your command for ten cents a "graft;" it is not the germs or material particles, but the disease itself—Bright's, catarrh—any that you will; but you can also have the "pus from a carbuncle," from "Pott's disease," etc. You can buy "Brahma" himself, it seems; or, if you are sad, you can, for ten cents, have "tears of a young girl in great grief and suffering"; the "salt of the brain secreted from a gentleman's scalp with the perspiration"; a "silk handkerchief eaten by a cow and taken from the stomach in a hard ball; during the three years she never had a

melancholy, idiocy, madness, epilepsy and convulsions of all kinds, softening of the bones (rhachitis), scoliosis and kyphosis, caries of bone, cancer, varices, pseudoplasms, gout, hemorrhoids, icterus and cyanosis, dropsy, amenorrhea, hemorrhages from the stomach, nose, lungs, bladder, or uterus, asthma and suppuration of the lungs, impotency and sterility, sick headache (hemicrania), deafness, cataract and glaucoma, renal calculus, paralysis, deficiency of the special senses, and pains of every variety.

[1] He concludes "that if pure water can be so enriched in medicinal virtue by simple contact with the hand as to cure a disease of years' duration, how much more must this power grow if a properly diluted drug, whose peculiar powers experience and provings have taught, be subjected to constant shakings in the hand until it becomes enormously efficient." Further, he says: "The poisonous properties are removed from a drug through its dilution, while its special peculiarities, so to speak, its soul, remains, and by rubbing and shaking becomes vivified and strengthened by human magnetism."

[1] Hahnemann's own words again: "By administering a medicinal potency exactly in accordance with the similitude of symptoms, a somewhat stronger, similar artificial morbid affection is implanted upon the vital power, deranged by a natural disease; this artificial affection is substituted, as it were, for the weaker similar natural disease (morbid excitation), against which the instinctive vital force, now only excited to stronger effort by the drug affection, needs only to direct its increased energy; but, owing to its brief duration, it will soon be overcome by the vital force, which, liberated first from the substituted artificial (drug) affection, now again finds itself enabled to continue the life of the organism in health." The wondrous clearness, logic, and correspondence with the facts of pathology, herein displayed make the statement a fitting corner-stone for a lot of lunatics and sharpers to build a system of philosophy and medicine upon!

[2] *Die Iris, nach den neuen Entdeckungen des Dr. Ignaz von Peczely;* also, *Die Augen-diagnose des Dr. Ignaz von Peczely*, etc.; von Emil Schlegel, Tübingen, 1837. Spots in parts of the iris, according to location, mean wounds of the ear, the shin, a syphilitic tumor, lung disease, prolapse of the uterus, etc., etc.

calf." One of the most interesting and suggestive items of the catalogue is simply entitled "Omnia."

If one quotes Hahnemann or the elder homeopathists, the Hahnemannians say "this is misrepresentation," and that "in modern progress we have advanced beyond all that." And if one quotes the modern homeopathists more versed in the art of mystification, but at heart equally absurd, it is said these do not represent true homeopathy. I have quoted both ancient and modern somewhat extensively, not because I have any special grudge against this School—far from it—but because its adherents are the most numerous and coherent body of sectarians, and because they have succeeded, in this quack-ridden land, in befuddling so many people, sensible in other matters. In a simple commercial sense, I ask, would it pay to publish catalogues and offer for sale combined middle-age filth and modern rascality, if there were not buyers?

To-day there are in 53 "institutes" some 8000 pitiable victims of sin, forming four times a day in 53 lines ("jab-time") to receive from renegade medical graduates (hired servants of an ignorant charlatan trading upon the name of medicine) the hypodermatic injection of a secret substance. They are guaranteed a permanent cure of their disease, and yet a large proportion have gone through the cure more than once, and a large proportion of those never returning a second time, relapse. Despite the medical, physiologic, and literary barbarism of the Keeley pamphlets, despite the indirect fiendish cruelties of the system (to friends of patients who ruin themselves to raise the money—those who can't pay the $100 "may," as at least one of the superintendents said, "go to hell!")—despite this and the secrecy, there are men, otherwise sharp-witted and intelligent, who are crazy in advocacy of this pernicious filth. The whole affair illustrates well the popular distrust in scientific medicine, and the popular belief in a magical short-cut to health by therapeutic miracle. Young Men's Christian Associations, which would not think of listening to a scientific lecture on the results and cure of chronic alcoholism, open their doors to this monstrous guller, and the Jay Gould of the preaching business, from a supposably Christian pulpit, calls for God's benediction on the most unchristian of deviltries. With a hound's chorus of a thousand newspapers, the Chicago *Tribune* leads in this infamous exploitation of the poor drunkard. So Perkins's tractors sprang into popularity, and so, after the speedy burial of this delusion, others will periodically spring up in obedience to popular superstition, prodded and nursed by cunning Mephistophelianism. I hope soon to have some very interesting revelations to make to you about Keeleyism.

The danger of medical lunacy overtaking the people is again illustrated by the vogue of the creed of the sorry folk termed metaphysical or divine healers, Christian scientists, Faith or Mind curers. Would you think it possible that people right here in the United States, among us to-day, could believe that "it is impossible that a boil is inflamed or painful," and that "inflammation, hemorrhage, and decomposition are but thoughts, beliefs,[1] and that carcinoma, diphtheria, typhoid fever, what you will, can be cured by prayer or thinking hard at it? According to Dr. Nichols,[1] there are within the limits of only one of these curious sects about 30 organized churches, and also 120 societies that maintain regular services. Twenty-three institutes, "scientific" and "metaphysical," are advertised in one periodical! The number of practitioners "regularly graduated" reaches thousands.

Or, take another national disgrace, the patent-medicine shame. Even semi-barbarous countries have forbidden the entrance within their limits of these vile concoctions, devised to empty the pockets of the poor of money, while filling their bodies with poison. Any chemical analyst would tell you these "non-alcoholic bitters" are made up of from 25 to 50 per cent. of the vilest alcohol. Thousands of poor babes have been killed by soothing syrups—of course, containing no opium or other hypnotic—and so on, so on, to the end of the list!

What an egregious farce, that people should buy a cure-all containing they do not and cannot know what; compounded they do not know by whom—certainly not, of course, by a physician—vouched for by no one, an evident bit of hoodooism to get money—a shotgun prescription fired at disease in the abstract—an unknown remedy for an unknown disease from an unknown hand! And yet the millions upon millions of dollars invested in these nostrums, and thereby annually filched from the ignorance and want of the poorest and neediest, should arouse even the most corrupt of legislators to put a stop to it all. The superlative impudence of the villainous syndicates is degrading and wrecking the once noble profession of pharmacy, and turning the disgust of the reader and traveller into nausea by the pollution of every newspaper and of every landscape with sickening advertisements.

And now, why do Keeleyism, the patent medicine and nostrum sham, the homeopathic disgrace, and a thousand such things exist among us? They are, of course, a vital loss and a vital injury to the community, working a pollution of body upon an idiocy of intellect, by a Boss-Tweedism of ethics. Why is our country the refuge and asylum of the survival superstitions, the delirious nonsense, and diabolical financial schemes that Europe has kicked out in wrathful disgust? Simply this: the newspapers, journals, and magazines dare not tell the truth or be the means of telling the truth. Every magazine or serial depends for existence upon two sources of revenue: its subscribers and its advertisers. Let a journal or paper publish an article exposing the infamy, and "stop my subscription" would come from a few dozen people whose pet fad is that they are being persecuted, and that they, who have never studied such things a minute, know the truth about physiology and disease that thousands of scientific men have been deceived in finding. Hence no editor dare admit an article showing up the shame and wrong of these things. Physicians and other scientific men have nothing to sell, nothing to advertise; but all quacks, nostrum-venders, and patent medicine men have something to sell, and their advertisements form a tremendous source of revenue to every paper in the land. Let any journal reveal to its readers their humbuggery, and at once it is ruined.

But advertisements maligning and misrepresenting

[1] Science of Health, pp. 231, 188.

[1] Science, Jan. 22, 1892.

their opponents are put into the reading columns as reading notices, neither editor nor publisher daring to disobey the orders of the syndicates. A well-known illustration is the thousand-journal denunciation and contumely for the past year or two of the druggists who dare "substitute" for the quack medicine called for, similar and equally good preparations at one-half the price of the more advertised cure-all.

Other examples of journalistic perversity might be cited; *e. g.*, *Harper's Magazine* a year or two ago published an article by a professional humorist, claiming that homeopathy had saved modern medicine from the medieval barbarism of filthy medication and beastly therapeutics. Would it insert an article showing that the reverse is the truth, and that by the malicious and egregious blunder it had grossly insulted every physician and scientist, civilization, and truth itself?

Would the newspapers of the country, headed by the *North American Review*, give one-hundredth of the free advertising to a reputable or scientific institution for the treatment of chronic alcoholism, that they have given Keeley's humbuggery, and out of which that shrewd advertiser is making millions of dollars?

The etiology and pathology of carcinoma is certainly a deep scientific question, and yet a dashing magazine editor, who had never studied it for a minute, indorses the cure of a quack, Mattei, who had likewise not a scrap of medical knowledge, and the people are thus gulled into spending hundreds of thousands of dollars. Any medical student could have exposed the fallacy, knowing how easily tumors are diagnosticated as carcinomata, and thus often "cured." Neither Mr. Stead nor his Italian Count care for science. They have a short cut to scientific knowledge no physician could have even found out by study or pathologic investigation!

A month or two ago, a bill, "a very moderate one," and one that "the three leading and influential schools of medicine" had recommended to the Legislature of Ohio, to control the practice of medicine, was shouted down in guffaws of derision by the barbaric civilized legislators of that State at the command of the lobby controlled by the so-called physio-medicals, the druggists, patent-medicine men, and the newspapers. After this delectable piece of diabolism, this same Fejee Island Legislature—of Ohio—voted $5000 to experiment with the Keeley humbug, each legislature to furnish one Keeley patient. Doubtless with such men charity is to begin at home, and the patient will not be hard to find!

Charley Lamb said that the only way he could relieve his feelings when he heard a Gregorian chant, was to lie down on the floor, flat on his belly, and howl like a Dervish.

It is useless and tiresome to multiply examples. To the honest physician the diagnosis is easy, but to the physician himself infected with the disease and in the incubation period, the disorder is unrecognizable. He will contend most vehemently that the patient is in blooming health. All who wish to know the facts can easily learn them. Evidence of the fallacy of the popular distrust may be seen by the words of one who is certainly a competent and unprejudiced observer—the present highly honored president of Harvard University:

"It is not more than a hundred years ago that medicine claimed to have been a liberal calling, an intellectual pursuit, and even to-day its position as such is very inadequately recognized by the mass of educated men. Now, I venture to say that, as medical education is now given in the best schools, no profession has a better right to claim the title of an educated, intellectual calling, and no men have a better right to demand recognition as intellectual men, as men of trained reasoning faculties, than the physicians themselves. I see, in my position at the head of the University, which includes the department of liberal arts and several professional departments, that the educated community does not recognize this. And I exhort you, gentlemen, in all your various fields of influence to do your utmost to establish this just claim of the medical profession to the position of an intellectual calling and to establish the claim of this great body as a body of highly trained men who use to the best advantage for the community the reasoning faculty, the scientific power of the human mind."

A quack is a man more interested in himself than in the healing art; caring more for his patent than for his patient; more desirous of making dollars than of curing disease. A physician is one whose first thought is to cure his patient. This is the sharp dividing line that makes the whole matter clear.

There are those that say that medicine is a business, that the cure of diseased people and the obviation of disease is a calling like any other; that the one who cures best will do the best business—*i. e.*, get the most patients. There is but one single comment to make to that: it is a lie, and the man who says it knows he is a liar. I beg of you, if you are entering the medical profession with such ideas in your heads and such intentions in your hearts—I beg of you, leave the profession to-day. You will be poor physicians, you will die ashamed of yourselves, you will disgrace a noble calling, and you will hinder civilized progress. I assure you this universe is not put up that way! You may make some money, perhaps, but the same deviltry applied in politics or bucket shops will get you much more of the stuff you seek. We have a wretched superabundance of such fellows now to watch. A large share of the energy of good men is already used up in neutralizing their malice and thwarting their cunning. You will do far better by running for aldermen, dealing in green goods, or in anything except in the health and confidence of afflicted human beings. That is a work fitting only to those who recognize other ideals and purposes than selfishness and money-getting. The acceptance by you of your diplomas this day pledges and consecrates you to a mission among your fellowmen that is truly holy. How far you are to be above trade is clearly shown by the fact that the chemist—as near a physician as he is—can without dishonor patent drugs and reap exclusive pecuniary gain from the learning and ingenuity of his brain—but you may not do this. In a close analysis the work of the chemist and scientist is due humanity as much as is yours; every device and improvement of civilization withheld from public use or sold dearly, is trading in people's lives, is a sin against the race—but only you, yours alone of all the callings, must realize the fact in every-day life. It is a glorious honor to belong to the profession of which that can be said. But the honor only comes to them that are willing to be unknown as honored, who find the reward

in doing the work, and in the secret satisfaction of a silent, happy, and peaceful conscience.

But with the professional honor and beatitude coëxists the professional duty. There is the greatest danger that the men who believe that medicine is a business will have their way, and sink professional standing to the level of politics and trade. Will you join them or will you oppose them? The whole of your life will be the answer, and this answer will largely consist in your attitude to quackery. Dr. H. C. Wood says that as few or no homeopaths to-day believe or practise the Hahnemannian clap-trap, they have, *ipso facto*, suicided, become in a sectarian sense non-existent, and that on our part *we* may ignore the fictitious distinction and fraternize with them. The President of the Philadelphia County Medical Society advises letting them into our medical societies. A prominent weekly medical journal of New York smiles very graciously at the sectarian, and a good friend of mine, an editor of a high-standard medical journal, tells me that in his city consultations with a sectarian are very common, and go unrebuked by physicians otherwise in good standing.

In other words, after centuries of struggle and with victory in our hands—throw it away in a fit of avariciousness, cowardice, and weariness. The gentlemen quoted doubtless mean well, but the advice is unconsciously traitorous to humanity and to the medical profession. If the advice be followed, we shall fall back again into what the printers call pi, and out of this general debasement moral physicians, as individuals, will again have to raise themselves above the re-commercialized mass, and with century-long struggle, reform again a new guild, with precisely the same ideals and aims, as that we poltroons had destroyed.

It cannot escape the observation of anyone who wishes to see facts as they are, that the great mass of homeopathists, by pure necessity, have in practice entirely abandoned the whole crazy nonsense of Hahnemannian mumbo-jumbo, and cling only to the name for purely commercial reasons. The great homeopathist, Guernsey, he probably who supplied "Dr." Swan with his sample or graft of "catarrhus nasi," says that there is in New York City, to-day, no exclusive homeopathic practitioner. Any fool knows that no disease can be influenced or cured by the medieval drivel of potentizations, shakings, smellings, similias, etc. But a lot of silly women have got it into their heads that this is a "nice" and a "new" school, and these mountebanks, while giving common drugs in physiologic doses, are willing to sail under false colors for the sake of the practice it brings. It is a sickening fact, but fact it is.

What is the treatment of this veritable and terrible contagious disease—quackery? How shall you meet it? What are you going to do about it? Compromise? The suggestion recalls Hugo's famous monosyllabic fighter at Waterloo.

Instead of the ninety thousand surrendering to ten thousand, suppose the ninety thousand learn a lesson.

Combination is the order of the day in the world of trade. What is thus done for selfish reasons may be done for unselfish ones. The patent-medicine men have got every druggist and every newspaper in America in their determined grip. The homeopathists meet in National and International conventions, and devote their entire energies and time to schemes for getting State and Governmental money and aid, and for grasping every point of pecuniary and social advantage. In our lofty scorn of such low cunning, and in our intense pre-occupation with disease and its cure, we never raise a finger toward meeting such attack, never pass a resolution to set Legislatures right, never try to instruct the public in its medical duties and self-interest. If as a profession, we did but devote a tenth of our collective energy and intellect to these things, quackery would disappear. The medical profession is shut within itself. It has no means or machinery for reaching the public ear. The few thousand quacks occupy the field; the public hears from them always and emphatically.

Realize the condition of the farmer and workman, uneducated, undiscriminating. These are the bulk of our people. With almanacs and circulars and million-fold devices, the advertisements, fictitious certificates, and false promises of the nostrum-traders and the quacks reach his mind and feed it with subtle poison and plausible falsehood. The family physician is squeezed aside, and his testimony against these frauds, if he have the frankness to denounce them, is credited to his jealousy. The medical profession has scorned to devise machinery to reach these people and to open their eyes to the humbuggery. By the great mass of the people the medical profession is looked upon with contempt or ill-will, its members to be called in dire necessity, its bills paid grudgingly. The bottles of the cure-all meet the physician's eye in every household. Every State and National medical congress or organization should have a literary bureau, the local physician as the local agent, to instruct the people in physiologic, sanitary, and medical duties, and to neutralize the pernicious influences at work. It should not be held beneath our dignity to make a popular but honest and instructive medical almanac for popular distribution.

The American Medical Association and the Congress of American Physicians and Surgeons, every State and every medical society should pronounce as bodies upon the great questions affecting the health of the public. Legislators think we do not care, that we have no power. The quacks have their ears and fill them. There are a hundred great public duties we are leaving undone when, if we but spoke as a profession, medical and sanitary progress would sweep on to certain victory. It is, let us hope, only a question of time. In the riot and intoxication of the rich conquest of American advantage, Democracy thinks that every outrageous form of delusional crankery must have its swing and chance to rule or ruin. But that day is fast passing away. We must now settle down to the hard work of governing and civilizing. When the Prince Hal of Democracy becomes the King of Civilization he must henceforth scorn the Falstaffs of quackery and scatterbrained tomfoolery. So in your case when the Student Hal becomes the Practitioner King beware that you be not tempted to think that the aim of your life, professional success, will come more quickly by compromise with quackery and trickery methods. There is no doubt of the fact: if you are after quick success you will find it that way. But this plan has three disadvantages: you will not find enduring success, you will not be self-satisfied and morally strong, and you will not gain the love and honor of your fellow-men.

To be explicit and detailed, let me counsel a few "don'ts":

1. Don't be in a hurry for success.

2. Don't consult or fraternize with quacks of any kind or degree.

3. Don't be afraid of speaking out your denunciation of quackery, regardless of the loss of a few possible patients and the charge of jealousy.

4. Don't support medical journals run in the interests of the advertisers, journals that are muzzled, that are conciliatory to, or non-denunciatory of quackery.

5. Don't sign a single certificate so long as you live, as regards special, proprietary, or secret preparations.

6. Don't write a medical article in which such preparations are praised or even mentioned.

7. Don't accept commissions or presents from druggists, manufacturers, opticians, or surgical-instrument dealers.

8. Don't let any professional allusion to yourself, your opinions, or your work get into the lay newspapers. Don't be a sneak advertiser, a "newspaper doctor."

9. In your own righteous wrath against quacks outside of the profession, don't forget that there are many within the profession, and that they are the most despicable—true wolves in sheep's clothing. I would rather be the "Wizard King of Pain," and buy affidavits of impossible cures at twenty dollars each, than a respectable hypocrite indirectly or secretly hobnobbing with newspaper reporters and supplying them with "data."

As physicians charged with the health of the present and future, our duty must become clear: the entire witch's Sabbath of 'pathies and 'isms, the morbid cranks, drunk with ignorance and conceit; the sly cunning of advertising schemers, the tricks and frauds of medical parasites to suck the blood of their dupes, the patent medicine disgrace—all these things must be choked out of existence. It is a warfare, not a compromise, we are entering upon. It is not a theory, it is a condition that confronts us.

Another need is for individual instruction of people. People are wofully ignorant, medically, and we have been shuffling and cowardly. When a nice little foolish woman or a pig-headed man with arched eyebrows and self-satisfaction, tells me, "Oh, I belong to the new school," I at once say, Ach, so!—the very school I belong to—but, we differ as to what the new school really is. Excuse me, do you have the itch? Do you believe that your eau-de-Cologne gets stronger by shaking it, and that if you shake it in a peculiar manner too many times it will get stronger than aqua fortis? Do you believe your ink will get blacker, or your whiskey stronger the more water you put in it? Do "ink-grafts" and Cologne "grafts" work? Do you believe in watching the way the toe-nails grow for a year after taking a bit of vegetable carbon—toasted bread—as symptoms of disease and evidences of drug-power? Do you believe the only safe way of taking medicine is by smelling it? Did you, as a boy, find that stomach-ache from eating green apples was cured by eating green currants? If you don't believe any of these things, you are a sensible person, not a Hahnemannian. These and such things are the only things that can be called Hahnemannian. If you don't believe them, do you think it honest or manly to pretend to believe them for the sake of a few dollars, and sneakingly, hypocritically practise medicine much the same as physicians do, giving common drugs in physiologic doses?

I have been surprised to see how a few minutes' talk with such people makes it plain to them what silly fools they have been, and how egregiously they have been duped. I have looked about for some scrap of literature I could hand to these folks, to show them what roaring nonsense they unwittingly gave their assent to. Oliver Wendell Holmes's little skit is almost the only such thing. Convinced, however, that people need and will profit by simple instruction honestly, plainly, justly put before them, I wish to have a little pamphlet prepared that, historically and actually, will show up the ridiculous pretensions of modern homeopathic practice. I shall, therefore, postpone a bit of private pleasure I had planned, and offer a little prize of $100.00 for the best essay on the subject.[1]

Such a monograph supplied as a missionary tract for gratuitous distribution by physicians, at the cost of printing, would set thousands of people straight, and would soon stop the legislative and financial governmental support of this trumpery. I wish some millionaire would give me a few hundred dollars to offer as prizes for other missionary tracts, *e.g.*, on the "Patent-Medicine Evil;" "The Reasons Physicians Do Not Advertise;" "Why Physicians Do Not Patent Instruments, Drugs, Etc.;" "The Duty of the Government and State to Medicine;" "Everybody's Medical Duty;" "The Desirability of a Higher Standard of Medical Education," etc. What a disgrace that we cannot get governmental aid for payment of meat and milk inspectors, boards of health, bacteriologic and hygienic institutes, etc., etc., whilst the people's money can be filched from them to support arrant quackery. What a disgrace that patent-medicine syndicates can draw many millions every year from the diseased, deluded, and poverty-stricken of our people, with a governmental tax of only 25 per cent. upon their mixtures, whilst the same people must pay a tax of 60 per cent. upon microscopes, and one of 49½ cents a pound and 60 per cent. besides upon woollen clothing.

The physicians of the civilized world are to-day working for the public welfare with a zeal and intelligence, combined with an unselfishness that no other profession, trade, or calling can faintly rival. Think, first, that these men are almost furiously seeking by hygiene and prophylaxis to render their own calling useless and superfluous, themselves occupationless. That is a fact so strange as almost to seem unnatural in these days of self-seeking, class legislation, trusts, and combines.

Notice, again, that every instrument, discovery, drug, or invention, brought out that will do any good to

[1] An essay should not contain over 15,000 words, and in simplicity and directness should be adapted to the commonest lay understanding. Papers should be sent me on or before January 1, 1893, type-written, without the name of the author, but accompanied by a sealed letter, giving the author's name with motto or *nom-de-plume*. The essays will be given to a competent committee, and when their decision is reached the sealed letters of the authors will be opened, and the prize sent the winner. The essay will then be cheaply but well printed in large quantities, and supplied physicians at the cost of printing.

humanity, is at once and unreservedly given to the world. No physician ever patents or keeps secret any discovery or invention. Compare that with the world's way.

Reflect, thirdly, that all the world over every physician, whenever asked, gives his services to the poor without demand or without hope of compensation. Would not a lawyer, or a locksmith, think one crazy if it were proposed that he should give a large share of his time and service for nothing?

Carry the thought on. The entire tremendous labor, *for the benefit of the community*, of keeping up the enormous hospital work of all the world's cities, is borne by physicians without a cent of pay. Are there, for example, thousands of similar institutions where the poor, free of charge, can get legal counsel and help? Is there one such?

It has been the universal medical tradition, accepted without a murmur, that whosoever devotes himself to the healing art must gladly construe his duty in this unselfish manner, renouncing the usual ideals and commercial methods of the surrounding world. Beyond all question it is a fact that a like grade of intellectual capacity, the same educational preparation, and an equal amount of tireless labor in any other calling would yield a far greater financial result than is secured by the average physician. A great physician said, "If my son goes into the medical profession, I shall cut him off with a shilling." "Why so?" "Because the profession is not appreciated by the public."

It is a public misfortune, a social evil, if there is slowly, subtly, but most certainly, creeping through the profession the lethal poison of a lowered ethical standard. Every person of the land has a selfish interest in preventing our adoption of the more selfish aims and ideals of the world of trade. Business men are very short-sighted if they allow or encourage medicine to become a business. Whenever this change shall have come about (if, alas! it should), and medical success is sought by the prevalent rules of trade, then the degradation will be irreparable, one of the noblest of offices will have become as corrupted and salable as those of politics, and an engine of incalculable good to humanity will have been hopelessly wrecked.

Could one but reach their ears, how one would like to appeal, to the general public, to legislators of a serious-minded type, if such there be, to the better class of independent journals, to the more thoughtful of literary men, to the rulers and teachers in colleges and universities, to careful and prudent business men even, to patriots and lovers of humanity, all. This malicious and stupid misconception; this non-recognition of, and opposition to, the true work and worth of modern scientific medicine; this hectoring and bullying of physicians in all their aims for the public good, this cordial support of all legislative and sordid schemes of cranks and quacks—is a social menace and a common danger. It is long past the time that this suicidal debauchery should have been stopped. To all good citizens it should be protested: This is your affair, not ours. It is as much a national sin as slavery, monopoly or class-legislation, vote-buying, the liquor corruption, or city luxury—more than a sin, it is a moral disease of the body politic, and such disease is an expensive luxury. It costs untold money, suffering, and human lives. Every physician knows of many deaths directly due to quackery, but the indirect deaths and consequences are incalculable. Quackery kills thousands to hydrophobia's one. The silent scourges are the great ones—those that cut off single lives slowly but ceaselessly. It becomes for you every day more and more a question of self-protection and self-interest. It is not, as you seem to think, a huge joke, but it is your health, your life, your future, that you are trifling with. Every epidemic of any contagious disease, to put it in the crudest way, means the waste of millions of dollars of lost time, of expensive sickness, and of grievous death. In these United States hundreds of thousands of needless deaths are annually taking place—needless, because you will reach no helping hand to physicians to carry out the preventive measures, discovered and well known to us. In these same States, still other millions of years of sickness and millions of deaths are going to occur during the next few years, again because you will not aid the medical profession to search out other at present unknown sources of disease. There are plenty of possible Kochs and Pasteurs among American young men, if you cared, as they do abroad, to help find them, instead of laughing at them, killing them with indignity and distrust, whilst feasting and honoring your beloved charlatans. Are your charlatans founding institutes of bacteriology and preventive medicine? Are they trying to probe the mystery and prevent the mockery of disease? Has it been the quacks that have builded the noble new home of which city and profession are proud, for the trinity of great schools of Medicine, Pharmacy, and Dentistry, of your beloved Buffalo University? Are you wise as a nation, if, like the old persecutors, you martyrize those who are your truest, most serviceable friends? For the sake of the simplest selfishness, for the love of your children, for the sake of civilization and humanity, for God's sake, let us turn away from the folly and sin of this trifling, and enter at last upon the ways that lead to HEALTH!

THE NEED OF COMMON SENSE IN MEDICAL PRACTICE.

An Address to the Graduates of the Woman's Medical College of Pennsylvania, May 4, 1892.

BY JOHN B. ROBERTS, A.M., M.D.,
PROFESSOR OF SURGERY.

SOME years ago, about 1377 I think it was, a predecessor of mine practising surgery was constrained to write an address on "Ye Manere of Ye Leche." This, by the way, was not a treatise on the abstraction of blood in inflammation, as you might infer, but an essay on the proper behavior and conduct of a physician.

This production of John of Arderne, written about a hundred years before the discovery of San Salvador, contains much that I would say to you. My first impulse was to read his words as my own production; but I was deterred by the thought that the Latin requirement of this College insured your detecting the flavor of medievalism. I shall be content with giving you some of his advice in the language of an early translator:

"Ffirst it behoueth hym that wil profite in this crafte, that he sette God afore euermore in alle his werkis and

euermore calle mekely with hert and mouth his help. . . . . And abstene he hym fro moche speche, and most among grete men. . . . . Also be a leche no*gh*t mich laughyng ne mich playing. . . . . Haue the leche also clene handes, and well shapen naile*z* and clensed fro all blaknes and filthe."

What necessary attributes of a surgeon! Trust in God—self-restraint in deportment—finger-nails free from germs.

I hear you whisper, "Ah! but those precepts of the fourteenth century teacher were not meant for the nineteenth century woman doctor. He knew no woman physician; and, moreover, she it is that does 'abstene fro moche speche' and 'be no*gh*t mich laughyng ne mich playing.'" Be not so sure of his want of acquaintance with you; for in a certain document, dated as early as 1389, occurs a distinct reference to women practising surgery in London.

Moreover, while our ancient surgeon was living in London, Richard II became King of England; and it was during his reign that the poet wrote:

> "Twa maydens with him thai left,
> That wele war lered of lechecraft;
> The lordes doghters both thai wore
> That war left to kepe hym thore,
> Thai heled him everilka wound."

If any further evidence is needed that John of Arderne wrote his address for the ears of women practitioners, call to mind that the wounded Sir Tristram, whose deeds are told in the "Morte d'Arthur," went to Ireland where the king "made Trystram to be put in his doughter's ward and kepyng, by cause she was a noble surgeon. And whan she had serched him she fond in the bottome of his wound that therein was poyson, and soo she heled hym within a whyle."

Ireland, in truth, has always been chivalrous to women; and at a later period than the composition of the tales of Arthur, we find in the Charter of the Barber Surgeons of the City of Dublin (1446) that this Guild for the promotion and exercise of the art of chirurgery was to consist of "men as well as women." Mark the phrase "men as well as women." The men were seemingly admitted as an appendage or corollary to the women.

Having thus proved that my author's words were meant for you, I shall let him speak concerning your conduct in the sick-room and of the confidential nature of your profession.

"Also it spedeth that a leche kanne talke of gode tale*z* and of honest that may make the pacientes to laugh, as wele of the biblee as of other tragediez and any other thingis of whiche it is no*gh*t to charge whilez that they make or induce a li*gh*t hert to the pacient or the sike man. Discouer neuer the leche vnwarly the counsellez of his pacientez als wele of men as of wymmen ne sette no*gh*t oon to another at no*gh*t, thof al he haue cause that he be no*gh*t gilty of counsell, ffor *y*if a man se ye hede wele a nother mannes counsel he will wist better in ye."

He, who wrote these lines five centuries ago, was imbued with the true spirit of the physician. His surgical writings, too, show that he was no servile follower of tradition, but a thoughtful, competent, self-reliant doctor. He had that rare gift of God—common sense. Lack of this rare gift is the source of many professional failures. Knowledge of anatomy, chemistry, therapeutics, and the "ologies" is certainly requisite for true success in medicine; but unless the graduate have common sense, all these are vain. Much of the ridicule cast upon medicine springs from a public recognition of the absence of common sense in the lives of many medical practitioners. A mental attitude of calm consideration and a judicious action, never over-enthusiastic or unduly conservative, are imperatively demanded of him who essays to direct Nature's physiological processes. A successful genius may be a fool, but a successful physician never.

I beg you to remember above all things that it is your patient that is to be treated and not the disease. Some practitioners seem to retain the idea, which before they began medical study they possessed in common with the public, that each disease is an entity, which must be combated with a specific remedy. This belief, born of ignorance, assumes that the first duty of the physician is to give a name to the disease afflicting his client; the second to select from the drug-shop labels a ready-made curative medicine. Such physicians fail to realize that the practice of medicine consists in so directing vital processes that the perturbations due to disease may be lessened and finally replaced by the normal functions of health. A doctor must necessarily study at first the pathological changes underlying and causing the symptoms; he then gives a distinctive name to the disease, just as a man does to his child, not to select the remedy by which to neutralize its evil powers, but for use as a distinguishing mark. The wise physician knows, for example, that one patient with pneumonia will be killed by bloodletting; that another with the same disease will die if it be omitted. The judicious practitioner examines circulation, respiration, digestion, secretions, nervous system; and prescribes to bring aberrant tissues and organs into normal activity. He will, perhaps, give the same drug in a case of pneumonia, peritonitis, scarlet fever, or broken leg, because the patient's condition is more important than the name of the affection.

Do not think I undervalue the studies carried on by the investigator in diseased structures, whom we call the pathologist. You must all be pathologists, so as to be able to examine circulation, digestion, secretions, and nervous system. What I am trying to impress upon you is that he is an unsafe physician who, after giving a name to a disease always treats that disease with the same powder, potion, or surgical appliance. This will be clear when I remind you that one case of typhoid fever may be as different from another as inflammation of the brain is from mere physical fatigue. The safe rule of practice is the common-sense rule: "Find out what is the matter with your patient, then treat him for his individual condition." No physician can treat disease successfully without attention to the physiological characteristics of the person affected.

Let me adjure you to avoid the quackish practice of frightening your patients with high-sounding Latin or Greek names for unimportant ailments. A woman may be scared into hysterics by being told of "hemorrhage" from a pin's scratch. Call it "bleeding," and she will give it no thought. Threats of "typhoid fever" and of

"gastritis" may bring dollars into the pocket of the physician; but such tricks belong to the unscrupulous. Not very different, however, is the course of him who, because of a great reputation, charges the sick enormous fees, knowing that fear of death always assists the highwayman in the process of extortion.

It requires little time for the public to recognize the trait which I have called common sense, and its recognition is soon followed by obedience to its medical possessor. See to it that your patients are obedient. If you accept the responsibility, you have a right to demand implicit obedience to all medical advice founded on science and common sense. Gain the confidence of your clients by knowledge and honesty, and keep it by insisting upon their hearty coöperation. A patient never trusts a doctor who takes him into consultation. Many well-educated physicians have starved by reason of a fatal want of self-trust inducing them to make consultants of their patients.

A word of caution about remedies of hidden composition may not be out of place. Put little faith in the asseverations of those whose sole interest in human woe is the money accruing from man's desire to escape sickness and death. Pliny was right in reproving the physicians of the first century for buying from the Seplasiarii medicines of whose components they were ignorant. It is not in accord with the dictates of common sense to risk your patient's safety by giving an unknown compound—perhaps inactive, perhaps deleterious—because the seller vaunts its virtues in large type and with voluminous documents.

Do not forget that even the educated may give worthless evidence concerning matters out of touch with their chosen pursuits. The eloquent divine may be honestly in error when he attributes the disappearance of his gout to the bracelet on his wrist, forgetting the efficacious horse-chestnut put in his pocket months before. His evidence as to the comparative value of medicine is scarcely more convincing.

Have the good-judgment to put little faith in the certificates, signed by physicians, which are scattered abroad by makers of proprietary remedies and by venders of manufactured and natural waters. Many of these recommendations are forgeries; others are obtained from physicians who will sign almost any paper presented to them. As scientific evidence such certificates are usually worthless. Never sell your own names to such purposes, whether the consideration given be friendship, patronage, or a box of neatly packed samples.

Much of your practice will be among women, notoriously liable to symptoms dependent upon a disordered nervous system. In treating them, even more than in treating men, it is essential that the physician ever bear in mind the nervous element. Bring the unbalanced mind into subjection, and the cure will often be easy. Common sense is here the key to success. Patient investigation will show absence of serious structural disease, and firm but gentle management will bring brilliant cure. No temporizing policy is permissible in this instance; no fateful compromise may be made with the indiscriminate use of opiates or sedatives. The physician must have the iron hand in the velvet glove. Considerate tenderness, unbending honesty, and a rigid discipline will bring the doctor who dares the patient's ire absolute obedience, faithful affection, and unbounded gratitude. This sort of a physician has the spirit of the old field-marshal whose motto reads: *Erst wägen, dann wagen*—First weigh, then dare.

It is the part of caution and common sense to prescribe narcotics as little as possible, and to see to it that your patient is not informed of the administration of these seductive drugs. Many helpless opium-users and alcoholics can date their moral degradation to the garrulity of the doctor or nurse. The use of these medicines is sometimes imperative, but often a less powerful remedy will be efficacious if combined with tact and common sense. A wise old writer testifies that a certain "untoothsome composition" was "admirably well suited to the intention of an hysterick," and such can often be found, which will be of use to-day.

It has been truly said that the medical profession is not one for untrained hearts and feeble brains, because it demands the devotion of a lifetime, the possession of ability, and a training which only the amplest opportunities can insure. The responsibilities put upon a doctor are somewhat similar to those assumed by the clergy, and the daily dependence of life upon the judicious character of his acts makes his function full of anxiety and care. No citizen has more capacity for rendering service to the State and his fellow-men than the educated physician. His special knowledge of the secrets of the human laboratory and his intimate acquaintance with the peculiarities of human nature give him incalculable power over the destinies of individuals.

We, your instructors, have endeavored to teach you the science of medicine—medicine founded on physical and physiological truth; and in that effort have aimed to show you how to observe and how to think. All the resources of science are to be pressed into your service. In the selection of methods of treatment, in the choice of drugs and their doses, you are bound to no authority, sect, or dogma. You are at liberty to use the infinitesimal dose, or the tangible pill; the remedy obtained from the vegetable kingdom, or that of mineral origin; the so-called current of the electrician, or the hypnotic influence of the strong over the weak mind. You are neither allopath, homeopath, electropath, nor hydropath. You are simply physicians, whose educated hands must draw upon every department of mental and physical science in the attempt to relieve and cure. Your teachers only ask that you prove all things and hold fast that which is good. Let your practice be founded on common sense and conscience, and then no folly, no evil, can be justly laid at your door.

You have to-day received your diplomas from a Medical College that for years has required more months of attendance on lectures and laboratory work than any other medical school in this great State of Pennsylvania, a State noted for the excellence of its medical institutions. It is gratifying to tell you that in October of next year will be inaugurated the compulsory four years' course, requiring your successors to attend four annual courses of graded medical lectures before being eligible for the degree of Doctor of Medicine. This advance and the additional requirements in the entrance examination, show you that the Woman's Medical College of Pennsylvania intends to be ever in the vanguard, and that you need have no fear of your alma mater

debauching the profession by lowering the standard of medical education.

The Corporators and Faculty need, however, your help—the help of all the alumnæ—to increase the endowment of the school, that additional opportunities for clinical study and for laboratory work may be provided, and that a healthy mind in a healthy body may be obtained by systematic and scientific physical training in a well-conducted College gymnasium.

My words may convey to you the impression that the life upon which you now enter is not an easy one. It is true. The daily work of a doctor is hard; but it is one full of deepest satisfaction; and in the words of Canon Liddon, physicians "have some part of their reward, at any rate, in a homage which neither wealth nor birth can possibly command." The knowledge of your usefulness to the public and of your ability to aid and support those in sorrow and despair is a thing that cannot be taken from you.

Worldly success, too, is sure to come to the educated, earnest, reliable doctor. An example is seen in that physician of whom a distinguished writer has recently said: "He owed our unbounded trust not to his intellect, which was not highly originative or fitted for profound research, but to a singular balance of mental and moral qualifications. Novelties neither too much tempted nor too much repelled him. He was intellectually very honest. . . . . I never knew a man who seemed to me to live his professional life on higher levels of that common sense which in its perfection is so uncommon."

Compare this quotation, giving the most valuable characteristics of the successful modern physician, with what our author of the fourteenth century tells us of "Ye Manere of Ye Leche"; and you will see that success and reputation depend now, as then, upon much the same traits.

An even older writer tells us, "In quietness and confidence shall be your strength"—First weigh, then dare, —and the esteem and commendation of your fellows, the approval of your own consciences will follow the recognition of duty nobly done.

Time, however, will not allow me to dwell on my theme, for "many thingis forsothe bene to be kept of a leche withoute these that ar seid afore that may no*ght* be noted here for ouer moche occupying."

MEDICAL PROGRESS.

Osteo-medullary Lesions of Mammary Carcinoma.—SNOW (*British Medical Journal*, No. 1628, p. 548) directs attention to two phenomena that he considers characteristic of the early stages of non-atrophic carcinoma of the female breast. One of these he designates the "sternal symptom," which consists in a prominence at the junction of the manubrium and gladiolus, whence it extends. It is occasionally attended with tenderness on pressure, and is ascribed to decalcification of the bone, with softening and deformity, together with some degree of hyperemia of the periosteum, dependent upon carcinomatous infection. The second physical sign, which is called the "humerus symptom," is relative thickening of the upper epiphyseal extremity of the humerus on the same side as the diseased breast, with deeply-seated gnawing and tenderness on pressure, likewise dependent upon infection by carcinomatous cells and secretions.

Chloroma.—HÖRING has reported a case of chloroma, a rare form of tumor, in a child six years old. The growth occupied the head and neck in the left parotid and submaxillary regions. The base and convexity of the skull, the lungs and the bronchial glands, and the kidneys and some mesenteric glands, were also involved. The pigment of the neoplasm was contained in the cells, and appeared as greenish granules, yielding the reactions of fat. Histologically, the growth consisted of a fine reticulum containing small, round cells, lymphocytes, that stained deeply and were deficient in protoplasm, together with some spindle elements. Höring considers the chloroma as a form of lymphoma, and proposes the name chlorolymphoma.—*Centralbl. f. klin. Medicin, 1892, No. 10, p. 186.*

The Unity of the Hematozoon of Malaria.—VINCENT (*Comptes-rendus Hebdom. des Séances de la Soc. de Biol.*, 1892, No. 12, p. 255) examined the blood in fifty-nine cases of malarial fever of various forms, and is led to accept the unity of the hematozoön. Spherical or ameboid bodies were found in all cases. In two cases flagellated bodies were present; in thirty-one, rosettes; in four, crescents. Crescents were found in the blood in two cases of recent intermittent fever; while in two ancient cases of irregular type ameboid bodies were found, but no crescents. In the same blood in each of a number of cases were found rosettes composed of a varying number of segments, from seven to twelve; nor did the number of segments and the shape of the organism always correspond with the type of fever.

Recovery from Three Ounces of Tincture of Opium.—BURGESS (*Dublin Journal of Mental Science*, April, 1892, p. 270) has reported the case of a woman, thirty years old, who, after taking three ounces of tincture of opium, presented profound symptoms of poisoning, the breathing for a time ceasing. Energetic treatment, however, including stimulation by electricity and otherwise, injections of atropine, and especially artificial respiration, pursued for seventeen hours, was finally followed by a gradual restoration of function, with eventual recovery.

The Pathology of Exophthalmic Goiter.—At a meeting of the Berlin Society for Psychiatry and Nervous Diseases, MENDEL (*Centralbl. für Nervenheilk. u. Psychiatrie*, February, 1892, p. 5) reported that in a case of exophthalmic goiter in a man, forty-eight years old, there was found after death no abnormality in brain, vagus, or sympathetic system. In the medulla, however, there was atrophy of the left restiform body and of the right solitary bundle.

Influenza Followed by Chorea and Death.—MCCARTHY (*Lancet*, No. 3579, p. 745) has reported the case of a woman, sixty-five years old, in which in the course of a protracted attack of influenza choreic movements in the right upper extremity and in the face appeared. Speech was interfered with. Despite active treatment, the woman grew progressively worse, until death occurred.

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WORD-BLINDNESS.

OUR knowledge of the remarkable variety of sensory asphasia known as word-blindness has of late years become much more definite and accurate. In the majority of instances, the condition has been associated with a lesion of the supra-marginal and angular gyri on the left side. It may exist with or without mind-blindness—that is to say, with complete inability to read, the patient may perfectly understand the relation and nature of objects and things. Word-deafness and word-blindness not infrequently coëxist.

In a recent study of considerable interest, DEJERINE contends that there are two different varieties of word-blindness. In one, the patient is incapable of reading either printed or written characters, and is incapable of writing either spontaneously or from dictation; in the other, although the patient is unable to read, he writes easily and correctly, either spontaneously or from dictation. The first form, word-blindness with agraphia, may exist alone, but is not infrequently accompanied by other manifestations, such as motor aphasia, paraphasia, or even word-deafness. Of uncomplicated cases of word-blindness with agraphia, several instances of great interest have been reported, in which the lesion has been accurately limited to the angular gyrus (*pli courbe*) on the left side. This symptom-complex of word-blindness with agraphia, associated with an accurately limited lesion to the *pli courbe* is opposed to the existence of a special graphic center in the brain, placed by CHARCOT and by EXNER at the posterior part of the second left frontal convolution.

In the second variety, which DEJERINE calls pure word-blindness, the power of writing spontaneously and from dictation is retained. The act of copying is, however, difficult. In a remarkable case, studied with great accuracy by DEJERINE, the localization of this form of word-blindness has been determined. The patient, a man, aged sixty-eight, extremely intelligent and cultivated, was for a period of four years the subject of total word-blindness, being unable to read written or printed characters, and though a musician he had lost entirely the comprehension of musical signs. As has been noted in one or two other cases, he retained, however, the power of reading figures and of calculating. There was no trace whatever of motor aphasia, nor was there any word-deafness or mind-blindness (apraxia). The power of spontaneous writing and of writing from dictation was perfectly preserved, and he could write correctly pages of manuscript. Copying could be performed, but with difficulty. There was right lateral hemianopsia with hemiachromatopsia. This condition persisted for four years, during which time the patient remained in good health, showing no signs whatever of any motor or sensory disturbance, or of word-deafness. He was intelligent, and able to attend to his affairs. An attack of loss of consciousness was followed by paraphasia and total agraphia, and in ten days by death. Old lesions (yellow softening) existed in the occipital lobe, involving the lingual and fusiform lobules, the cuneus, and the tip of the occipital lobe, with marked atrophy of the fibers of the optic radiation. There was recent red softening in the inferior parietal lobule and the angular gyrus. The old lesions in the occipital lobe explain the hemianopsia, and DEJERINE offers the following explanation of its relation to the pure word-blindness: "On account of his right hemianopsia the patient no longer saw the letters with the left hemisphere, but only with the *right half* of each retina, as the right hemisphere was intact. He saw the letters simply as any other signs, and copied them as such, but they had no meaning for him, because the con-

nections between his two common visual centers and the visual centers for words in the angular gyrus was interrupted. This latter center was not injured, as shown by a study of his internal speech (*language intérieur*), from the absolute integrity of spontaneous writing and of writing from dictation, and from the fact that optic images of letters could again be revived by throwing into action his muscular sense, by making him trace in the air the outlines of letters with either the left or the right hand. With regard to the disturbance in copying, it is easily explained by this interruption in the connection between the angular gyrus and the two occipital lobes."

"CHRISTIAN SCIENCE" IN CHICAGO.

THE *Chicago Inter-Ocean*, in defence of a "Christian Scientist" who has been prosecuted on account of the death of one of her victims, indulges in the following lucid and forcible comparison:

"It has been said in behalf of homeopathy that if the remedies do not cure, neither do they kill. The worst that can be said of them is that they let the patient die a natural death. The same can certainly be said of the so-called 'Christian Science' treatment. And in reality, does it not look as reasonable that mental treatment should be as effective as the infinitesimal medicines of Hahnemann? Does it not look just as reasonable that a strong mind, trained for mental healing, should be as efficient in a case of typhoid fever as the 160th trituration of arsenicum further diluted in a half-glass of water and given to the patient in teaspoonful doses every hour? . . . .

"Homeopathy stands to-day face to face with allopathy on the same plane, fully sharing in the public confidence and respect. But it is just as difficult to understand how a single grain of a remedy infinitesimally divided and given in successive doses can cure a disease as it is to understand how the trained mind, determined on doing the same thing, can accomplish the purpose."

As allopathy does not exist except in the imagination of homeopaths and those whom they have succeeded in hoodwinking, there is nothing in the letter of what we have quoted with which we cannot agree; nor are we entirely sure that the editor of *The Inter-Ocean* is incorrect when he claims that those who desire to commit suicide by the method of Christian Science "have the right to exercise that choice without let or hindrance from the public."

Three points, however, seem to have been overlooked by *The Inter-Ocean:* First, that where the representation is made of ability to cure, and money or other valuable consideration received, the criminal offence of obtaining money under false pretences is committed. Secondly, that in cases of epidemic or contagious diseases, the safety of the public is involved, and that, therefore, the law has a right to interfere. Thirdly, that while, in some States, everyone has the right to commit suicide, in no State has anyone the right to commit homicide; and that, therefore, although the entrusting of one's own life to Christian Science healing may be justified on the ground of saving the fool-killer unnecessary trouble, yet it is certainly a crime to endanger the life of another—wife or husband, parent or child. On these grounds society is also entitled to interfere with that "free exercise of choice" so dear to the heart of *The Inter-Ocean.*

THE TEMPERATURE IN INFLUENZA.

INFLUENZA has been so thoroughly discussed that it would seem as if its symptomatology were completely written. Many of the symptoms of the disease are most readily explicable upon a neural basis, while the recent discovery of a specific bacillus, together with the knowledge of the intoxications that usually follow in the train of bacterial infection, gives support to such an explanation. In a given case, pulmonary, gastric, intestinal, cardiac, cerebral, or spinal symptoms predominate, as the nervous apparatus of one or the other system bears the brunt of the disease. The course of the pyrexia presents no special characters. As a rule, the temperature rises to its highest at the beginning or early in the attack. Not uncommonly the elevation is preceded by a rigor. In the course of the disease the temperature pursues a continued type, in some instances subsiding by lysis, in others by crisis, sometimes attended with sweating. In some cases, however, the pyrexia has pursued a most unusual course. Thus, KORNBLUM (*Zeitschrift f. klin. Medicin*, 1892, xx, 1, 2, p. 160) describes a form of intermittent influenza in which the temperature presented irregular exacerbations, with aggravation of the general symptoms, and remissions with corresponding amelioration. There are also some observations of subfebrile temperature in the course of influenza. Thus, S. SOLIS-COHEN (*Philadelphia Hospital Reports*, vol. i, 1890, p. 162; *Therapeutic*

Gazette, March 16, 1891) describes coldness of surface, enfeeblement of circulation, tendency to collapse, and prolonged subnormal temperature as common in cases of influenza. In one case, the subnormal temperature was the only objective sign of disease. This observation has been confirmed by VINTRAS (*British Medical Journal*, No. 1629, p. 601), who found the temperature subnormal in the period of depression following the acute stage of influenza; and ELLIOTT (*British Medical Journal*, No. 1630, p. 682) adds testimony of like character. In the current issue of THE NEWS, in the report of the proceedings of the American Pediatric Society, EARLE, of Chicago, is quoted as having made a like observation in children. The lesson to be learned from the facts recorded is that influenza is a depressing disease in which the vital powers are to be sustained and elimination of noxious matters encouraged, while depressing remedies of all kinds are to be sedulously avoided.

REVIEWS.

A TREATISE ON DISEASES OF THE LUNGS AND PLEURA. By the late WILSON FOX, M.D., F.R.S., Fellow of the Royal College of Physicians; Physician-in-ordinary to her Majesty the Queen; Holme Professor of Clinical Medicine at University College, London, etc. Edited by SIDNEY COUPLAND, M.D., F.R.C.P., Physician to the Middlesex Hospital. 8vo., pp. xxxii, 1200. With portrait frontispiece. Philadelphia: P. Blakiston, Son & Co., 1892.

FROM the sympathetic preface of the editor, we learn that this treatise comprises the main literary labor of its lamented author. The delay in its publication has been due to its extent and the necessity of making it represent the knowledge of the day. It remains, however, substantially as its author left it. There have been no excisions of the text, and all of the author's opinions have been retained, the editor having merely made certain additions rendered necessary by investigations and discoveries since Dr. Fox's death.

The editor is fully justified in saying that, from the time and pains expended by the author in its production, and the amount of knowledge that it contains, this work occupies a unique place in English medical literature; that its striking characteristic is thoroughness, and that the author's extreme fair-mindedness in dealing with the work of others stands prominently out in its construction. There is hardly any fact for which some authority is not cited, so that in this praiseworthy effort to do justice to others the author hardly seems to have done justice to himself. Nevertheless, it is evident that the present work contains much that is original and the result of independent thought. We heartily commend to medical writers in general the following trenchant remark of the editor's: "There are some whose originality lies mainly in their ignorance of the work of other men; there are others who, like Dr. Wilson Fox, aim solely at the declaration of the truth, and are anxious above all to give credit where credit is due."

The articles on Emphysema, Bronchiectasis, Pulmonary Embolism, Intra-thoracic Tumors, and Gangrene of the Lung are by far more detailed and exhaustive than in any other existing English treatise.

The elaborate articles on Pneumonia, Broncho-pneumonia, etc., first appeared in Reynolds's *System*, but they have been thoroughly revised, with the exception of that on Chronic Pneumonia, which was left untouched. There is no means of knowing whether or not Dr. Fox had intended to re-write this article.

To properly review this book in the space at our command would be a hopeless task. The work shows patient, persistent, faithful study from books, from patients, at the bed-side, and from diseased organs after death. Each page is replete with information, much of which can scarcely be found elsewhere without prolonged search through monographs and forgotten treatises.

Such books as this of Fox's, as Fagge's *Practice*, as Gowers's *Diseases of the Nervous System*, as Brunton's *Pharmacology*, seem to be produced only by English physicians. They are not only scientific, like the German; interesting, like the French; practical, like the American—and scientific, interesting, and practical at once—but they bear the marks of thorough training in observation and in the recording of cases, brought to bear upon a richness of material such as seems hardly to be rivalled outside of London.

To attempt to criticise the author's views without first fully setting them forth would be worse than useless, and we can only heartily and thoroughly commend the book to the careful study of every English-reading physician whose aim it is to be thoroughly informed as to the progress of his science and his art.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By W. R. GOWERS, M.D., F.R.C.P., F.R.S. Second edition, revised and enlarged. Volume I. Diseases of the Nerves and Spinal Cord. Philadelphia: P Blakiston, Son & Co., 1892.

ALTHOUGH several works of importance have appeared since the first publication of the treatise of Dr. Gowers, it has held its place for six years, as the clearest, the most complete, and the most trustworthy textbook on nervous diseases in any language. The present edition has been both revised and largely re-written, containing many additional pages of valuable matter. It is, indeed, extraordinary how much personal experience and work the author has incorporated in this manual; it is by no means simply a compilation.

The discussion of peripheral neuritis in the first edition presented this subject more fully and clearly than any other work, general or special, and deserved prominence has been given to the same subject in the present edition, new sections bringing its consideration up to date. The diagnosis of multiple neuritis is thoroughly and carefully considered, and special attention is called to the necessity of determining whether the spinal cord is concurrently affected with the nerves. The account of syringomyelia, although not lengthy, is complete and comprehensive, and contains also the re-

sults of the observations made since the publication of the first edition. In a brief notice of a second edition, however, it will not be expected that we shall review at any length the merits of particular chapters. The new edition more than sustains the high appreciation which was extended to the book on its first appearance. We can say of this work what can be truthfully said of but few professional text-books, that it is adapted to the uses of the student, the general practitioner, and the specialist.

This treatise proves clearly that the day of great text-books written by single individuals has not altogether passed away. The present is an era of monographs and of "Systems"; but one great defect in the latter is the tendency to unevenness, both of quality and quantity, in the consideration of different subjects—long and elaborate articles are furnished upon certain topics, while others, perhaps of nearly equal importance, are discussed in a short and incomplete manner; and chapters well digested and carefully prepared are found side by side with rambling compilations. This text-book, written by one who is a master of lucid style and of the specialty which the book considers, is free from this great fault.

We believe that a book of the size of the present treatise is better presented in two volumes than in one. The present publication, which is the first volume of the Manual, includes diseases of the nerves and spinal cord, and gives with the index about 600 pages; the second volume will deal with diseases of the brain, and general diseases of the nervous system. We trust that the American publisher will keep the book in two volumes.

In concluding this brief notice we need only say that we believe that this great *Manual of Diseases of the Nervous System* will outlast in popularity and length of years nine-tenths of the text-books and systems that have appeared during the last decade.

Diseases of the Eye. A Handbook of Ophthalmic Practice, for Students and Practitioners. By G. E. de Schweinitz, M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. With 216 illustrations and two chromo-lithographic plates. Philadelphia: W. B. Saunders, 1892.

This excellent work of Dr. de Schweinitz and of Dr. Wallace deserves a hearty measure of praise. It is hardly too much to say that for the student and practitioner beginning the study of ophthalmology it is the best single volume at present published. The parts pertaining to diseases of the eye are exceptionally good, though there is sometimes evidence of a somewhat hasty walking over rough places with perhaps too easy a stride.

The chief criticism that occurs to our mind is against a sin of omission evidently committed with the completest forethought and intention: the scorn of what the author, if he were absolutely frank, would probably designate as the childish or even contemptible enthusiasm of some ophthalmologists as regards the effects of "eye-strain" and the reflex symptoms reported as due to ametropia. In the entire work the term eye-strain or its equivalents, with the resultant symptoms, are hardly mentioned. Headache is alluded to as a symptom of heterophoria. The sneer is scarcely veiled in the unwilling admission that cure of the "host of other complaints" has followed the correction of the ocular difficulty, but it comes out pretty plain in the snapper-end of the sentence: "There is also no doubt that the whole matter has not always escaped exaggeration."

In an ophthalmologic treatise issued in this country and in Philadelphia in 1892, it seems a little strange that among the "symptoms" of hyperopia and of astigmatism not a single reflex symptom, not even our beloved headache, is even mentioned. This method of exposition may be very pleasing to a few general physicians and neurologists who long ago settled the matter in their own minds, but it may be politely protested that such settlement will hardly stand the tests either of time, of truth, or of a more unprejudiced court.

We marvel that American authors and publishers continue to use an antique style of orthography that all the splendid philologic talent of American lexicographers has united in condemning. There is, moreover, self-inconsistency here: why write *hemorrhage*, and on the same page *hyperæmia*. It is time we were done with *anæmia*, and *centre*, and *anæsthesia*, etc.

Did Dr. Wallace really mean that his chart (p. 171) is in the illustration reduced only one-sixth?

The causes of ametropic choroido-retinitis, as set forth in the original paper of Dr. Gould, were not limited to (ametropia and) insufficiency of the internal recti muscles. Heterophoria of any type may produce it.

The terms "with the rule," and "against the rule," as applied to astigmatism, are used, but, if we do not err, are nowhere explained.

Seancé (p. 555) is one of but very few typographic errors noted.

The index is sadly incomplete.

CORRESPONDENCE.

FILTH-DISEASES.

To the Editor of The Medical News,

Sir: In the issue of The Medical News of March 19, 1892, Dr. Charles V. Chapin, of Providence, expresses his views in an article entitled "Are Typhoid Fever and Diphtheria Filth-diseases?" It seem to me that the writer lays himself open to criticism in conferring upon his article such a title as the foregoing, for the reason that a cursory reading of the paper might imbue the mind of a busy reader, whose time is precious, with a lingering suspicion that *filth* may not be the extremely dangerous factor in diseases of this nature that bacteriologists and health boards contend.

The paper is an interesting one as demonstrating how far one may expect to find individual cases of such diseases depending on the sanitary condition of the *houses in which they occur*. That such diseases do not depend on filth the paper does not prove satisfactorily, for the writer's own admission in concluding his article is as follows: "It seems to me that diphtheria and typhoid fever are not filth-diseases, in the sense in which the public understands that term, except in a very limited degree."

Are we to understand that the writer thinks the public over-educated on the subject of filth; that he thinks it

would be well to depreciate to the public the dangers of filth; or, that he thinks the dangers arising from filth are over-estimated by the profession?

In the opening sentences of the article, the writer states: "The causative relation of filth to disease is a theory based in the first instance, it is to be feared, on the too careless inference drawn from data not sufficiently investigated and understood." Certainly the writer cannot hold the same understanding of the definition of "filth-diseases" as do the majority of the people.[1]

He states that "not all germs are pathogenic. In fact, the great majority are not, and this is particularly true of those found in decomposing material—*i. e.*, filth;" and in the next few lines, that "it is not filth in the sense of dead and decaying organic matter which is dangerous, but only such matter when it is the seat of growth of specific pathogenic organisms." Filth composed of dead and decaying organic matter may or may not be dangerous. I should like, however, to recommend inquiry as to how we can determine just what individual samples of filth do, or do not, contain disease-germs, or how we can know that *any* filth does *not* contain disease-germs?

The germs of typhoid fever and of diphtheria not only find a lurking-place in filth, but they luxuriate and multiply in it.[2]

The presence of the germs of diphtheria and of typhoid fever in the human system is but an epoch in their life-history—simply an incidental method of vegetating and multiplying. Such growth and multiplication mean disease and perhaps death to the human organism, thus made a means of furnishing fertile soil for their development; but the germs so propagated continue to live, and, if under favorable circumstances, to thrive, after their exit from their temporary habitat in the human organism.

On the other hand, filth is dirt,[3] and in the connection in which bacteriologists use the word, I take it to include sewerage, decomposing organic material of either vegetable or animal nature, organic dust, contaminated sewer-gas, water containing in solution any appreciable amount of organic matter. In all such, disease-germs may lurk, and, under suitable conditions, may grow and multiply. The fact that all germs are not pathogenic does not in any way justify us in countenancing filth because the great majority of germs found therein are not pathogenic.

No one now considers that from filth, pure and unadulterated, any abiogenesis of typhoid fever or of diphtheria germs ever takes place.

Over fifteen years ago, Prof. Tyndall, after elaborate experiments proving the truth of his assertions, said, in regard to the propagation of bacteria: "No change of any isolated organism into another organism is ever observed. The bacterium remains a bacterium; the vibrio, a vibrio; the penicillium, a penicillium; and the torula, a torula. Sow any of these in a state of purity in an appropriate soil; you get it, and it alone, in a subsequent crop. In like manner, sow smallpox in the human body, your crop is smallpox. Sow typhoid virus, your crop is typhoid; cholera, your crop is cholera. The disease bears as constant a relation to its contagium as a thistle does to its seed."[4]

The cause of every case of typhoid fever should be thoroughly sought for; and because it may not be found, the idea that it has arisen without cause should not be countenanced for a moment. There is a cause, and the problem is to find it. The more difficult it is to find, the more safely, other things being equal, may we attribute its dissemination to filth. Germs of these diseases lurk in filth, and because pure air and sunlight are detrimental to their life and growth, they lurk in perhaps no other place so securely and constantly as in filth; and, therefore, such cases of disease as are generated from that source are called, and, in our humble judgment, properly called, "filth-diseases."

Again, would the writer have us understand that by "bad sanitation" he means a bad condition of isolated houses taken into consideration individually, and not conditions of filth-accumulation in vaults, cesspools, wells, or even the water supplied by a conduit that might have a common causative relation to disease? If he would not have us so understand him, what is expressed in the following sentences? "If where typhoid fever and diphtheria are found, bad sanitation is much more prevalent than in other dwellings near by, we would have good reasons for suspecting a causative relation. But if not, we would be required to seek very strong evidence elsewhere to show that these are filth-diseases."

Would not the position of a health-officer lead one to inquire into the condition of all surroundings of a case of either of these diseases that *might possibly* furnish the contagion, whether it involved a distance of yards or of blocks?

It is known that wells may be infected by filth contaminated with such disease-germs for a distance of at least several yards, and water supplied by conduits may be infected at a point miles away from its final destination. Certainly to most medical men "bad sanitation" means more than the poor plumbing of individual houses under consideration; and they would consider a water-supply contaminated by filth containing disease-germs (the relation of water-supply to typhoid fever is not referred to), a much more prominent instance of bad sanitation.

Again, we should be pleased with experiments or data going to show that "there is no evidence of any relation between scarlet fever and filth," for which statement the writer gives no authority except his own. In the light of recent revelations in bacteriology, and in the presence of its beneficent influence on the public health, the depreciating of a possibly too ardent enthusiasm in its study seems to me somewhat ill-timed; for though the paper in question might lead some superficial reader to believe that filth is not the dangerous factor in our civilization that it is proving to be, yet I think we need not fear that the paper may put any check to the overwhelming flood of evidence that filth and disease are almost synonymous.

Dr. Bayard Holmes well expressed the ideas most

[1] Century Dictionary, p. 2217: *Filth-disease*, a disease caused by or arising in consequence of filth.

[2] T. Mitchell Prudden: Story of the Bacteria, p. 84. THE MEDICAL NEWS, Feb. 27, 1892, p. 249.

[3] Webster's International Dictionary, p. 560.

[4] The Floating Matter of Air, p. 264. D. Appleton & Co., New York, 1884.

popular with the profession in this regard, when he said: "It will soon become as embarrassing to say, 'I have just recovered from an attack of typhoid,' as to say, 'I am just getting rid of the itch.' As the family was the unit that perpetuated and exterminated the itch, so is the community the unit that perpetuates and must exterminate the filth-diseases."

It cannot be, I think, that filth may soon become too much feared by the public, or that it may be unjustly stigmatized by coupling its name with disease by our present method of designating such afflictions as "filth-diseases."

Yours very truly,

WILLIAM C. BRAISLIN.

BROOKLYN, N. Y.

INFLUENZA IN EASTERN MONTANA.

To the Editor of THE MEDICAL NEWS,

SIR: The altitude of this part of the Yellowstone Valley is about three thousand feet above sea-level, and if there is a difference in the picture here drawn and its counterfeit presentment in lower regions the atmospheric conditions are responsible.

Judging from a description of the physical geography of Russia, influenza finds in parts of our State a field for exploitation comparable to its European habitat.

There are seemingly distinct varieties, according to the temperament. The nervous type is the prevailing one. Intense headache, deafness, neuralgic pains, catarrhal symptoms, are common. Among children pseudo-whooping-cough, either as a sequel or concomitant, occurs. At the onset, convulsions, followed by protracted delirium or unconsciousness, have often been recorded. Membranous enteritis in children and adults is much more frequent than usual.

A middle-aged Massachusetts woman, who had carcinoma of the breast in abeyance, on coming to this section was stricken with influenza, the malignant disease rapidly progressing to a fatal termination. She first experienced the usual difficulty so common to newcomers. More lung-tissue must be brought into active play to aërate the blood properly. Corset-wearing and indoor life make the abnormal lung-expansion exceedingly difficult, and hence women do not become acclimated as soon as men. In the case in question, the necessity of employing the accessory respiratory muscles aggravated the carcinomatous disease.

The use of strong drink is perhaps more common in Montana than elsewhere in the Union. Insurance companies are obliged to let down the bars to some extent on the question of alcoholic indulgence, in order to do business in the State. It was a common practice for men who found themselves contracting influenza to fill up on whiskey. When the patient had previously been abstemious, alcohol did not act as a prophylactic or an abortifacient of the disease. In habitual drinkers it was decidedly indicated.

Interference with pregnancy was common, together with a condition well described by Professor Da Costa as resembling typhoid fever, with a rather high and continuous temperature. No fatal results have been noted as a result of this complication. Cases of rheumatism have been more common than usual. Syphilis is a common visitor to the physician's office, but no cases of influenza in association with primary syphilis have turned up. Social conditions make venereal diseases more common than the census would indicate. Just across the Yellowstone River is the Crow Indian Reservation. The squaws are notorious for their filth and unchastity. Not a single case of influenza has been under observation in an Indian.

A young married woman, about twenty-eight years old, gives a history as follows: Succeeding the influenza, she is obliged to wear glasses for near-sightedness; has partially paralyzed lower limbs; cannot walk without dragging the toes, and has lost the power of having sexual intercourse.

Chorea, followed by obstinate incontinence of urine, occurred in a girl ten years old, after the influenza. Death from chloroform-narcosis in a young, unmarried woman happened at a dentist's office in February, 1892, the supposed cause of which was the influenza. Half an hour after death, while artificial respiration was being performed, one pupil was widely dilated and the other contracted.

Taken altogether, influenza on the table-lands of the Rocky Mountains has been a formidable enemy to health.

Respectfully,

JAMES E. FREE, M.D.

BILLINGS, MONTANA.

PETROLEUM-EMULSION FOR SKIN-DISEASES.

To the Editor of THE MEDICAL NEWS,

SIR: For some time I have been employing a coal-oil emulsion as a local application in eczematous and other skin-affections attended with itching. It does not obtund the sensibility of the hyperesthetic tissues in manner and degree like carbolic acid, but it is free from the unpleasant odor of the latter. As an excipient for some of the usual skin-medicaments it may be used advantageously. Alone, it varnishes and soothes the sensitive surface, and if not always curative it is at least a valuable adjuvant to other treatment. Besides being quite innocuous, it is, in my opinion, anti-microbic and is unaffected by lapse of time and contact with the body.

Among those for whom I have prescribed it in connection with other treatment, I venture to quote an Iowa physician, who wrote me February 3d, last, that he had been a victim of papular eczema for years. Under date of April 4th he further remarks: "I thank you for the interest you took in my case and for the good advice you gave. I find petroleum-emulsion the best of anything I have used. It quiets the itching for a time; it forms a nice protective sufficient to keep my clothes from irritating; and besides, being cleanly and not offensive, is easily washed off. I am quite well and think my improvement has come from constitutional more than local treatment." (Linen or cotton should have been used to cover the application.)

I need not remind your readers that in many affections of the skin, as in the case narrated, there may be a diathesis, rheumatic or otherwise, which will demand systemic as well as local treatment. Meanwhile, a placebo, with all that the name implies, is an important desideratum.

Respectfully,

C. M. FENN, A.M., M.D.

SAN DIEGO, CAL.

SOCIETY PROCEEDINGS.

AMERICAN PEDIATRIC SOCIETY.

Fourth Annual Meeting, held at Boston, May 2, 3, and 4, 1892.

FIRST DAY—MAY 2D.

THE President, DR. WM. OSLER, of Baltimore, delivered the Annual Address. After returning thanks for the honor conferred upon him, he spoke of the necessity of specialism in America, and also of the benefits accruing to the general practitioner, as well as of the necessity of thorough preliminary training and devotion to the selected calling. Too little attention has hitherto been paid to the diseases of children. Hospitals and clinics may enable the student or practitioner to acquire proficiency in the necessary technique. Post-graduate schools have also been great aids in this direction. The American Pediatric Society has taken a prominent part in making attractive the study of the diseases of children. The full text of the address will appear in the next number of THE NEWS.

DR. AUGUSTUS CAILLÉ, of New York, read a paper entitled "Experiments as to the Value of Nascent Ozone in Certain Forms of Diseases of Children, with Demonstration of an Efficient Ozone-generator." The ozone-generator employed was first shown by Labbé and Oudin at the last meeting of the Congress for the Study of Tuberculosis. These authors reported thirty-eight cases of pulmonary tuberculosis treated with ozone, of which thirteen were reported as cured.

Dr. Caillé obtained a number of ozone-generators for experimental purposes, and placed them in the houses of trial-patients, in order to get the best possible results.

A number of cases of pulmonary tuberculosis in the first stage were investigated, as also were cases of chlorosis and pertussis. Particular notice was taken of the appetite, the strength, the weight, the vital capacity, and the percentage of oxyhemoglobin before and after treatment. The conclusions reached are as follows:

1. Inhalations of ozone from various apparatus have not been followed by noticeable ill-effects.

2. Daily inhalations of ozone increase the quantity of oxyhemoglobin in the blood from 1 to 4 per cent. in a short while, and this increase remains stationary for some time.

3. In typical cases of limited apex tuberculosis local improvement was not obtained by the ozone treatment.

4. In pertussis ozone has a very distinct curative effect as regards the duration and severity of the disease.

In chlorosis and in anemia, ozone inhalations are exceedingly valuable from a therapeutic standpoint, and give better and prompter results than any other form of medication.

Atmospheric disinfection is readily secured by means of Labbé and Oudin's apparatus, making this a valuable procedure in the treatment of diphtheria, scarlet fever, and other infectious diseases.

DR. CHAS. WASHINGTON EARLE, of Chicago, followed with a paper on "Manifestations of La Grippe in Children." He stated that there is accumulated testimony that very young children, ranging from a short time after birth to three months of age and older, are susceptible to influenza. The period of incubation is from a few hours to a week. In the West, the disease has been severe in its symptoms, with great irritability and mental depression, and in many cases with subnormal temperature. There is some similarity between influenza and diphtheria in their effects on the circulation and in their nervous manifestations. Loss of weight has also been a prominent symptom. It is important that cases should be early placed under treatment, and not be discharged too soon. The necessity of municipal control in affording means for preventing the spread of the disease was dwelt upon.

The subject was discussed by Drs. Rotch, Jacobi, and others, the consensus of opinion being that the type of disease described by Dr. Earle differed greatly in the severity of the symptoms from that seen in the East.

DR. ROTCH stated that the cases that he had seen in children were milder than those among adults. It seemed to him that the sympathetic system is profoundly affected.

DR. JACOBI was positive that the nervous symptoms of diphtheria and of influenza, respectively, are different in character and in cause.

DR. ADAMS expressed the view that climatic conditions had much to do with intensity of the symptoms.

DR. C. P. PUTNAM, of Boston, reported "An Epidemic of Alopecia Areata in an Asylum for Girls." Of sixty-nine of the children, sixty-three were attacked in the course of the year 1891. One girl was attacked in January, one in March, and just before the first of June sixty-one others were suddenly attacked. On the other hand, no matron or any of the older girls who served as assistant matrons had the disease, nor did any of the six girls who were sent to the country at the end of June have it. Careful and repeated examinations of the hairs had failed to show any microörganism. The appearance of the hairs was such as is ordinarily found in alopecia.

After the hair had been shingled, a corrosive sublimate solution was daily applied to the head of each child. The girls were divided into classes, and treated in different ways: one class with corrosive sublimate, two grains to the ounce; one with tincture of cantharides; one with thorough inunctions of sulphur ointment; one with cantharidal ointment; and one with turpentine.

From the middle of July the patients improved throughout the year, and at the end of the year comparatively little was to be seen of the disease, though at this date there were still a few bald patches, and on some of the larger spots the hair was growing sparsely.

No particular effect, however, was attributed to the various kinds of treatment. The progress of recovery was about the same in all of the different classes.

DR. BOWEN stated that the cases that he had seen showed no symptoms of ringworm, but were undoubtedly alopecia areata. Microscopic examination was negative.

DR. WHITE expressed the view that the cases differed in many respects from any he had yet seen; thus, for instance, in the angularity and in the number of the spots, as well as in the rapidity of development of the disease.

SECOND DAY—MAY 3D.

DR. A. JACOBI, of New York, submitted a brief report on "Hydrorrhachis and Hydrocephalus," and showed a pathologic specimen of spina bifida. The condition

was probably congenital. The case was treated by means of injections of Lugol's solution into the tumor, without much pain or inconvenience. The head was also aspirated, without bad symptoms, and fluid evacuated. Iodine was never found in the urine. The case finally died, the treatment not materially affecting its progress.

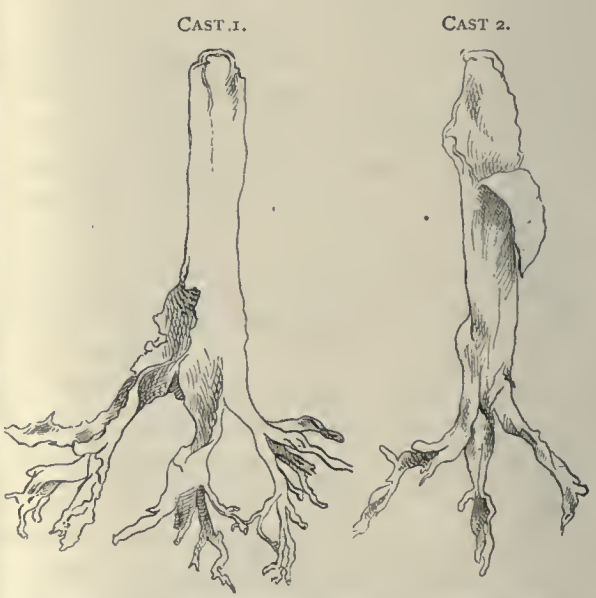
The specimen showed great atrophy, with club-feet and dislocation of both femurs, which was probably congenital.

In the discussion Dr. Jacobi added that a few cases have been benefited by treatment, but in the main the outlook is poor. It is none the less necessary, however, to do all that is possible for the relief of the cases.

DR. W. D. BOOKER, of Baltimore, read a paper entitled "Pseudo-diphtheritic Processes," in which he considered the similarities and the differences of diphtheria, scarlatina, and measles, the mode of invasion, and the difference between the tendencies of the respective affections. Specimens from different cultures of microörganisms were shown. The bacilli of diphtheria differ from those of pseudo-diphtheria in being more numerous.

DR. HENRY KOPLIK, of New York, read a paper entitled "Forms of Diphtheria which Simulate Simple Angina." He called attention to those forms of true diphtheria of the tonsils, pharynx, and larynx that, from a purely clinical inspection, it was at first glance impossible to positively differentiate from forms of angina of an innocent, though infectious, nature. He had directed his attention to the so-called doubtful cases, and had studied them both clinically and with the aid of bacterioscopic methods and animal inoculation. There are forms in which the diphtheria of the larynx or pharynx and tonsil is unaccompanied by the presence of any visible membrane. Such cases may run a mild course and infect others, who, in turn, may recover, but a third generation of infection may develop membrane in the throat, and end fatally. In a second form of diphtheria that simulates the innocent angina the membrane appears as a small speck on one or the other tonsil. In a third form of doubtful cases there is a single ulceration, sometimes covered with exudate, on one or the other tonsil. Some of these cases, taken to be simple ulcerated sore-throat, were shown by bacteriologic cultures and animal experiments to be true diphtheria, whereas other cases cited, almost identical in clinical features, were proven in the same manner to be non-diphtheritic. Still a fourth class of cases was constituted of those in which follicular appearances, such as are customary in follicular tonsillitis, were combined with minute patches of pseudo-membrane between the follicles on the surface of the tonsil. Some of these cases were shown to be diphtheritic. Dr. Koplik called attention to a class of cases that for many days would run the course of follicular amygdalitis, and suddenly develop symptoms of croupy voice and breathing, with specks of membrane on the palate, pharynx, and tonsil. Some of these cases had been observed daily without the detection of membrane, until the onset of the untoward symptoms noted. Some of the cases terminated fatally. Finally, a class of cases was described in which exudate appeared on the tonsils, and in which the pseudo-diphtheria bacillus of Hofmann, but not the true bacillus of Löffler, was found. The pseudo-bacillus was found, also, in forms of tonsillitis and laryngitis in which no membrane presented itself. These cases closely resembled the cases of diphtheria without visible membrane belonging to the first group of cases of true diphtheria with doubtful clinical appearances already considered. Thirty-four cases were examined in the clinical and experimental method indicated. No case was cited that had not been thus studied. Isolation of all clinically doubtful cases was advised as the best safeguard in general practice.

DR. F. HUBER, of New York, read a paper entitled "Two Tracheal and Bronchial Casts" (with plates). The two casts presented were coughed up by a girl, more than eight years of age, suffering from laryngeal, tracheal, and bronchial diphtheria. About a half-hour after intubation had been practised, a tube suitable for a child from five to seven years old being used, the patient suddenly became asphyxiated and dropped back apparently dead. Upon wrenching the jaws apart, the tube, displaced in the struggles, was readily removed with the finger. Proper remedies being applied, the patient rallied, and a large cast of the trachea and main bronchi was coughed up (Cast 1). On the following day, as the dyspnea recurred, tracheotomy was performed. A second cast of the trachea, bronchi, and ramifications was expelled through the tracheal canula a few seconds after its introduction (Cast 2). Death took place twenty-four



Cast No. 1.—Coughed out after removal of intubation-tube. (Reduced about one-half.)

Cast No. 2.—Coughed out through tracheal canula. (Reduced about one-half.)

hours later, in consequence of renewed formation of membrane. There had been no pyrexia until the fifth day, when the temperature rose to 101.5°.

The asphyxia that occurred shortly after the tube was inserted was not due to crowding down of the membrane by the tube. It was undoubtedly occasioned by the separation of the loosely attached membrane, in consequence of the irritation induced by the presence of the metal tube. It is the only instance in about two

hundred cases of intubation in which the accident occurred.

The facility with which the membrane was cast off is explained by the character of the tracheal and bronchial mucous membrane. If the epithelium (as in the trachea and bronchi) is cylindrical and numerous acinous glands secrete mucus, the membranes are loosely spread over the mucous membrane, from which they can be readily removed. The low temperature, so common in laryngeal and tracheal diphtheria, finds its explanation in the presence of large numbers of mucous glands, which do not permit absorption by the lymphatic vessels.

The specimens also show the rapidity with which membrane may be formed—from nine to ten hours sufficing to produce these large casts.

The unusual experience on the preceding day with intubation, the fact that the membrane was so readily thrown off, and in such large masses, induced a resort to secondary tracheotomy.

The two preceding papers were discussed by Drs. Caillé, Seibert, Fisher, Earle, and Jacobi. The consensus of opinion seemed to be that all cases should be isolated, and that doubtful cases should be viewed with suspicion.

DR. CAILLÉ expressed the view that treatment had not yet been influenced by the advances in bacterial knowledge.

DR. SEIBERT cautioned that even pseudo-membranous cases should not be looked upon as innocent.

DR. FISHER spoke of the necessity of making cultures in all cases as a means of accuracy in diagnosis before pronouncing upon a case.

DR. W. P. NORTHRUP, of New York, read a paper on "Typhoid Fever in Children Under Two Years." He insisted upon the difficulty of diagnosticating typhoid fever in children, and stated that among 2000 cases he had never seen a case of typhoid fever in young children (under two years). As to the lesions simulating typhoid fever, his experience was that swollen Peyer's patches and swollen mesenteric nodes in young children never meant typhoid fever. The object of the paper was to raise the question as to the frequency of the fever in young life and to warn against attributing to the lesions of the small intestine in young children the same interpretation that would apply in adults. The paper was intended to strengthen the view that typhoid fever in children under two years never occurs. The exceptions must be very rare. The cases used in illustration were worked out bacteriologically.

DR. CHARLES W. EARLE, of Chicago, presented a paper on "Typhoid Fever in Children." He maintained that very young children do have the disease, manifesting all of the symptoms as they are seen in adults, and sometimes dying from hemorrhage. He spoke of a case in a child three weeks old, in which bacilli were found. In twenty cases of his own that recovered, the youngest child was two years, the oldest seven and a half years of age. The characteristic symptoms were all present. Dr. Earle laid stress on the necessity of giving liquid food throughout the course of the disease. Antipyretics should not be used unless the temperature reaches 104°.

DR. W. S. CHRISTOPHER, of Chicago, read a paper on "Typhoid Fever in Infancy." He stated that in infants typhoid fever was in most cases milder than in adults. The febrile movement is slight; constipation is generally present; the spleen is enlarged, as determined by percussion; rose spots are also present. Dr. Christopher doubted, however, having knowledge of cases under two years of age.

In the discussion DR. NORTHRUP spoke of the extreme difficulty of detecting enlargement of the spleen by percussion, unless the organ extended below the margin of the ribs.

DR. HUBER spoke of the infrequency of typhoid fever in children younger than two years of age.

DR. SEIBERT expressed the belief that he had seen cases in children under two years of age, and spoke of irrigation of the lower bowel as a therapeutic procedure.

DR. ADAMS stated that in children the prominent symptoms met with in adults are usually wanting.

DR. ROTCH was of the opinion that the pathologic condition and methods of exclusion would aid in making a diagnosis.

DR. JACOBI related that he had seen several cases in children under two years of age. He thought that by exclusion and by the high temperature, the rose spots, and the diarrhea, a diagnosis might easily be arrived at.

DR. CHAS. W. TOWNSEND, of Boston, read a paper entitled "A Case of Sporadic Congenital Cretinism." The patient, an infant, twenty months of age, presented all the characteristic symptoms of cretinism. The skin of the face was thickened and edematous; the base of the nose was flattened; the tongue was large and protruding from the mouth. The extremities were relatively shortened, as shown by comparison with a normal infant. The thyroid gland was absent, as is the case in the majority of sporadic instances.

The child would frequently appear, for a period of from several minutes to an hour, as if dead, the respirations being feeble and almost suppressed, a feature commonly found in cases of the kind. The temperature in the rectum normally was 96.8°; the respiration was at all times not more rapid than from 12 to 17 in a minute. The mental condition was one of idiocy.

DR. HUBER stated that he had seen several cases of sporadic congenital cretinism in New York.

DR. B. K. RACHFORD, of Newport, Ky., read a paper entitled "The Anemia of Tuberculosis." He introduced his subject with the report of a case. A young girl, with a strong tuberculous family history, who had been constantly exposed to tuberculous contagion for years, presented herself with dyspnea, pain in the side, loss of appetite, sick stomach, great weakness and nervousness. There was no fever, no cough, and no physical evidences of either lymphatic or pulmonary tuberculosis. Two years previously, however, she had some "kernels" in her neck. The most striking symptom was extreme anemia. The blood was found to contain only 25 per cent. of the normal proportion of hemoglobin and 1,680,000 red corpuscles to the cubic millimeter. After three months of treatment with iron and arsenic, the patient was discharged, feeling better than she had for years. At this time the hemoglobin had a valuation of 90 per cent., and there were 4,000,000 red corpuscles to the cubic millimeter. Seven weeks later, although the patient said that she was well, an examina-

tion of the blood found only 65 per cent. of hemoglobin and 3,200,000 red corpuscles to the cubic millimeter. Two weeks of treatment again brought the hemoglobin to 90 per cent. Special attention was called to: 1st, the strong tuberculous family history; 2d, the constant exposure to the contagion; 3d, the "kernels" in the neck two years before the case came under observation; 4th, the absence of immediate evidence of glandular or pulmonary tuberculosis; 5th, the state of the blood; 6th, the improvement of the blood-state after treatment; 7th, the rapid diminution of the hemoglobin after the treatment was discontinued; 8th, the remarkable fact that the girl had escaped pulmonary tuberculosis for so long a time.

The cause of the anemia was by no means clear, and suggested an inquiry into the relationship of anemia and tuberculosis.

A table containing the family history and the blood-state of 166 convent girls was presented. In 58 cases, the family history was negative; in 30, the family history was good; and in 78 cases, there was a tuberculous family history. After excluding all the cases of apparent pulmonary and glandular tuberculosis, there still remained 69 cases with tuberculous family histories, with an average of 80¼ per cent. of hemoglobin, and 30 cases with non-tuberculous histories, with an average of 80 per cent. of hemoglobin. The table also showed that of the 37 anemic cases, 72 per cent. had tuberculous histories and only 7¾ per cent. had non-tuberculous histories. From these and other figures taken from the table presented, Dr. Rachford concludes that family tuberculosis is one of the great causes of anemia, even though there be no *apparent* active tuberculosis to account for the anemia. Eight cases of glandular tuberculosis presented in the table had an average of 57 per cent. of hemoglobin, and 10 cases of pulmonary tuberculosis had an average of 80 per cent. of hemoglobin. It is held that these figures show that it is tuberculous disease of the lymphatic system, rather than tuberculous disease of the lungs, that produces the most profound anemia. Dr. Rachford further concludes that the anemia in *apparently* non-tuberculous girls of tuberculous stock, is, when not readily explainable by other causes, very probably due to a deep-seated and hidden glandular tuberculosis; or, in other words, that *pronounced anemia, without apparent cause, is strongly suggestive of concealed tuberculosis.* In the light of these investigations he concludes that the case with which he opened his paper is one of deep-seated glandular tuberculosis.

THIRD DAY—MAY 4TH.

DR. A. SEIBERT, of New York, read a paper entitled "Syphilitic Broncho-stenosis in Children." The cases he reported were mostly among emigrants, particularly Russian Jews. The symptoms presented were dyspnea, cough, manifestations of laryngeal stenosis, together with signs indicative of bronchial stenosis. In one case intubation was performed, but without relief. The diagnosis was made by exclusion and by the rapid recovery under anti-syphilitic treatment.

DR. SAMUEL S. ADAMS, of Washington, reported "A Case of Death from Laryngismus Stridulus in Incipient Rhachitis." The case was that of a young infant, with convulsions and attacks of dyspnea, dying suddenly. In the absence of any determinable cause, death was ascribed to rhachitis.

In the discussion DR. JACOBI spoke of the exclusive use of milk as predisposing to the development of rhachitis. He expressed the view that, in the case reported, swallowing of the tongue might, perhaps, have been the cause of death, as death was stated to have occurred during swallowing, and symptoms of rhachitis in the case were not prominent.

DR. A. JACOBI, of New York, read "A Note on Peroxide of Hydrogen." He condemned the indiscriminate use of hydrogen dioxide, as in his experience the agent had shown marked irritating properties on the mucosa, and in diphtheritic cases aided in spreading the disease to neighboring parts of the buccal cavity. In each case its discontinuance was followed by improvement.

In the discussion it was elicited that other members had likewise had unfavorable experience with the remedy.

The discussion on "Chorea: its Relation to Rheumatism," was opened by DR. C. W. TOWNSEND, of Boston, who called attention to the fact that statistics as to the frequency of rheumatism in cases of chorea vary much, owing to the obscure nature of rheumatism in children. The questions to be considered are:

1. Does rheumatism occur with greater frequency among choreic than among non-choreic children?

2. Does rheumatism act simply as a debilitating disease in its relation to chorea, or is there an intimate relation between the two diseases?

3. Is the heart-murmur, often found in chorea, due to endocarditis, and is it liable to lead to serious heart-disease?

In answering these questions, Dr. Townsend considered all the cases of chorea in the Out-patient Department of the Boston Children's Hospital, 148 in number, from 1883 to 1890, a large number of which had been seen at the hospital, or visited at their homes after the original attack of chorea. He found that 21 per cent. of these had had rheumatism, and 30 per cent. a heart-murmur, one-half of the latter developing organic heart-disease. That there is an intimate relation between rheumatism and chorea seems evident from the large proportion of rheumatic cases among the latter. Among non-choreic children, only 5½ per cent. were rheumatic, or 12 per cent. including the cases of so-called "growing pains." Another reason for believing in the intimate relation of chorea and rheumatism lies in the fact that chorea is often followed or accompanied by rheumatism, as well as preceded by it, one sometimes giving place to the other.

The occurrence of endocarditis in chorea without rheumatism is considered a strong argument against the purely neurotic theory, and one that pointed to the infectious nature of chorea.

The conclusions reached were:

1. Fright, eye-strain, debility, and school-pressure—particularly the last, which often includes some of the others—are potent exciting causes of chorea.

2. Rheumatism, although absent from the history of at least half of the choreic cases, occurs with greater frequency among choreic than among non-choreic patients.

3. There is an intimate relation between chorea and rheumatism.

4. The heart-murmur, so frequently found in chorea, sometimes associated with rheumatism and sometimes not, is, in a considerable proportion of the cases, due to endocarditis, and leads to organic valvular disease.

Dr. M. A. Starr, of New York, was not present, but in a communication to the President bearing upon the occurrence of rheumatism and heart-disease in cases of chorea, he stated that the large majority (356) of the cases upon which his statements are based is taken from the records at the Vanderbilt Clinic, which are kept with much care. A small number are from his class at the New York Polyclinic, and the records in these cases are imperfect. The remainder are from private practice, in which, however, but few cases of chorea are seen, possibly because the higher classes are much less subject to the disease; possibly because it is usually treated by the family physician, and hence a consultant is not called.

Of 385 cases of chorea, 234 were general, equal 60 per cent.; 140 were unilateral, equal 36 per cent.; in 11 the extent is uncertain, equal 4 per cent.

A distinct history of rheumatism was obtained in 70 cases, equal 18 per cent.; in 281 cases rheumatism was denied; in 5 cases pains of a doubtful nature were admitted; in 29 cases no record was made of rheumatism.

Organic cardiac disease was found in 70 cases; functional murmurs were found in 56 cases; the heart was found to be normal in 212 cases; no statement was made regarding the heart in 47 cases.

In the twenty-nine cases in which no statement was made in the history regarding the occurrence of rheumatism, the probability is against its having been present—the omission of any record being equivalent to a denial on the part of the patient, as it has always been customary to inquire into the possibility of rheumatism. "Growing pains," or pains of an indefinite kind, are not included under "rheumatism." The cases in which rheumatism is noted were cases in which a distinct attack of acute articular rheumatism had occurred. The fact that the number having had rheumatism and the number having organic cardiac disease happens to coincide, is accidental. Many cases that had rheumatism or had been subject to rheumatism, were free from cardiac murmurs. Many that had cardiac murmurs denied having had rheumatism. The coincidence is none the less striking. In the majority of the patients with organic cardiac disease the diagnosis was confirmed by frequent observations subsequently to the recovery from chorea. In several cases the development of the heart-murmur had occurred during an interval between a first and second attack of chorea. About 20 per cent. of the cases have had relapses—some as many as five relapses while under observation—but it cannot be said that those that have had rheumatism are more liable to relapses than those that have not had it.

In 340 of the cases a record is made of the history of the parents as regards rheumatism and nervous diseases and pulmonary tuberculosis. In 58 cases one or both parents had suffered from rheumatism. In over 100 cases one or both parents were said to be "nervous."

Dr. F. M. Crandall, of New York, laid stress upon the fact that subacute rheumatism, as seen in the adult, may be very serious in the case of children. In 54 per cent. of cases of chorea, rheumatism was noted, while in 38 per cent. there was a rheumatic family history.

Dr. Adams considered neurasthenia an important factor in the development of chorea; more so than rheumatism, which holds an indirect relation to chorea.

Dr. Jacobi expressed the view that rheumatism is frequent in young children, and that cases should be more strictly investigated. He believed that rheumatism is related to chorea in some manner, endocarditis in chorea, in his opinion, being more frequently the result of unrecognized rheumatism.

Dr. T. M. Rotch, of Boston, read a paper entitled "The Value of Milk Laboratories for the Advancement of our Knowledge of Artificial Feeding." The paper was accompanied with diagrams. The different constituents of milk and their relative proportions in human milk and in cow's milk were considered. The methods employed in sterilizing milk were detailed. The importance of a pure milk in the first place was dwelt upon, as well as the necessity of the milk being adapted to the individual case.

Dr. L. Emmett Holt, of New York, read a paper entitled "A Simple Method for Clinical Examination of Breast Milk." He presented tubes, by means of which a proper estimate of the proportions of fat, sugar, and albuminoids can be made.

Dr. F. Huber, of New York, presented a communication entitled "Congenital Multilocular Sacro-coccygeal Cyst; Operation; Recovery." The case was that of a female child, of Russian Polish parentage, that at birth presented a multilocular cystic growth arising apparently from the posterior aspect of sacrum and coccyx. The pendulous mass was about four inches long and three inches wide, irregularly nodulated and rather ovoidal in shape; the skin covering it being thin, translucent, and of a dusky hue; on its surface ran large superficial veins. The base was somewhat constricted, though no distinct pedicle existed. Anus and rectum were normal.

On the nineteenth day, the first operation was performed. The skin was but loosely adherent to the growth, except where numerous fibrous bands separating the cysts were attached to the deeper layers of the integument and caused a retraction, giving rise to the irregular nodules visible on the surface.

The removal was accomplished by a process of dry dissection with the aid of blunt-curved scissors and the fingers, the fibrous bands only requiring to be divided. In spite of the numerous large vessels coursing over the surface, there was but little hemorrhage, until the deeper attachments to the coccyx were separated. In all, but three ligatures were employed. A small portion of the growth, situated to the right and running toward the rectum still remained. The child's general condition counter-indicated any further operative measures; it was, therefore, concluded to introduce a drainage-tube and suture the wound. The child rallied nicely. The middle third of the wound failed to unite primarily and was allowed to granulate from the bottom. When two months old, the remaining portion was removed. The skin over it was firm, thickened, slightly pigmented, somewhat hairy, and intimately adherent to the

growth. The mass contained a few cysts imbedded in a reddish-gray lipoma, but imperfectly encapsulated. An inch of the rectum was exposed in the process of enucleation.

In separating the adhesions to the coccyx (from which the growth evidently originated), an elongated cyst simulating a communication with the spinal canal presented itself. Only one vessel, the nutrient artery of the growth, entering at the tip of the coccyx, required a ligature.

The large mass first removed weighed seven ounces and was composed of a large number of cysts, separated from one another by dense fibrous tissue. The smaller, firm and solid, portion was composed of lipomatous tissue, in the midst of which were a few cysts; its weight was an ounce and a half. The larger cysts contained a fluid resembling that of a hydrocele; some of the smaller cysts, particularly those near the coccyx, contained a thick, yellowish, opaque fluid. The child rallied nicely from the second operation. A mild erysipelas and a rather severe intestinal catarrh delayed the favorable progress in the first week.

The formation of these growths has been attributed to included fetation, gemmation, or inclusion of a portion of the outer layer of the blastoderm at the time of the closure of the dorsal laminæ.

J. Bland Sutton classifies the congenital sacro-coccygeal tumors under four heads: 1. Sacral spina bifida. 2. Tumors originating in the post-anal gut. 3. Rectal dermoids, cystic tumors originating in the neurenteric canal. 4. Parasitic fetuses.

The multilocular cystic growths (the group most frequently met with in this situation, and particularly in females) may arise from the anterior or posterior surface of sacrum or coccyx, or both. Varying in size from an egg to a child's head, their subsequent growth may be quite rapid. As a rule, no pedicle exists, and exceptionally a communication with the spinal canal may occur. In some cases, the cystic character predominates in the growth; in other cases, fatty or fibrous tissue masses form the greater portion of the tumor, but few cysts being found. Cartilage, bone, and even intestine may be present.

The contents of the cysts resemble the fluid of a hydrocele; some of the smaller, particularly those attached to the coccyx, contain an opaque, yellowish material.

Ritschl, one of Kraske's assistants, made an exhaustive microscopic examination in one case. He describes three varieties of cysts, three kinds of glands, pieces of cartilage, round or horseshoe-shaped, smooth muscular fibers, and intestinal mucous membrane. Nerve-elements and striated muscular fibers were missing. The smallest round cysts were lined with pavement epithelium; the larger cysts contained a lining of epidermis, with hair in different stages of development. The majority presented a lining of ciliated cylindrical epithelium.

Solitary follicles, diffuse adenoid tissue, and a few acinous glands were discovered. The absence of voluntary muscular fibers and of nerve-elements leads Ritschl to the belief that the growth was not due to an intra-fetation. He is of the opinion that these tumors, from some unknown cause, are due to an arrest of the retrograde metamorphosis of fetal rudiments peculiar to this situation.

Many of the children thus affected are stillborn, others live a few days, and in those that survive, the mass increases, sometimes with great rapidity. Spontaneous cures have been reported from sloughing or ulceration; on the other hand a fatal termination may be caused by exhaustion or sepsis.

No partial measures should be employed in the treatment. When the question of operation arises, the probable existence of a communication with the spinal canal should not be forgotten.

Excision has given the best results and should be resorted to whenever possible.

The following officers were elected for the ensuing year:

President: A. D. Blackader, M.D., Montreal.

First Vice-President: J. M. Keating, M.D., Colorado Springs.

Second Vice-President: C. W. Earle, M.D., Chicago, Illinois.

Secretary: S. S. Adams, M.D., Washington, D. C.

Recorder: William P. Watson, M.D., Jersey City.

Treasurer: C. W. Townsend, M.D., Boston.

Member of Council: T. M. Rotch, M.D., Boston.

The Society adjourned subject to the call of the Secretary.

NEWS ITEMS.

Dr. J. M. Keating has resigned the editorship of the the *Climatologist.*

The Middleton-Goldsmith Lecture, before the New York Pathological Society, will be delivered by Dr. Francis P. Kinnicutt, on Wednesday evening, May 11th, at the Academy of Medicine. The subject of the lecture will be "New Outlooks in the Prophylaxis and Treatment of Tuberculosis."

The Association of American Medical Colleges will hold its third annual session in the Detroit College of Medicine, at 3 o'clock P.M., on Wednesday, June 8, 1892. Dr. N. S. Davis, President of the Association, will read a paper entitled, "To What Extent Should Clinical Instruction be Afforded the Student of Medicine in Regular Course?" Dr. V. C. Vaughan, of the University of Michigan, will read a paper entitled, "To What Extent Should Laboratory Instruction be Afforded the Student of Medicine in Regular Course?"

Correction.—In the article on "Gangrene of the Testicle," in THE MEDICAL NEWS of April 30, 1892, p. 490, the legend of the illustration should have read: Blood-smears from the gangrenous testicle. Cocci and bacilli. Stained by Gram's method. Beck's $\frac{1}{12}$ homo. im. Oc. 2. Camera-lucida drawing.

BOOKS AND PAMPHLETS RECEIVED.

Nervo-vascular Disturbances in Unacclimated Persons in Colorado. By J. T. Eskridge, M.D.

Experiments in Pneumonectomy and Pneumonotomy. By DeForest Willard, M.D., Ph.D. Reprint, 1892.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE TECHNIQUE AND VALUE OF SPUTUM-EXAMINATION.[1]

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THE examination of sputum for tubercle-bacilli is undoubtedly the most serviceable of the known methods of differentiating pulmonary tuberculosis in its early stages from other less serious affections. The assistance to be derived from a thorough examination of the sputum in all doubtful or suspected cases is obvious when the fact is considered that tubercle-bacilli can be found in the sputum, in most cases, prior to the development of physical signs and symptoms that would warrant a positive diagnosis. While their discovery in more advanced cases eliminates any doubt that may be entertained as to the nature of the disease, the most practical value of such examinations is to be found when they are made in the cases of patients whose condition is still hopeful if placed at once upon proper treatment. The practicability of this comparatively simple means to assist in making a diagnosis at a time when it may be of inestimable value has prompted me to present, in a form very largely of a review, some of the more recent methods of preserving and examining sputum for tubercle-bacilli.

It is scarcely necessary at this time to dwell upon the well-known method of making cover-glass preparations directly from the crude sputum, and the staining of the same by Ehrlich's, Neelsen's, Gibbes's, or other methods that are usually given in detail in modern works on bacteriology and pathologic histology. This method is very satisfactory, and it seems to have no superior in the great majority of cases in which such examinations are usually made, but in a large number of more doubtful cases in which examination is especially desired for its diagnostic value, the advisability of relying upon negative results obtained from cover-glass preparations made directly from the crude sputum has been questioned, on account of the small number of tubercle-bacilli present in the beginning of the invasion and the unevenness of their distribution throughout the sputum. It is also a well-known fact that the method is primarily applicable only to a newly expectorated discharge, as the sputum, unless kept at a low temperature, very soon undergoes fermentation and putrefactive changes, which render it undesirable for examination, although the bacilli could still be detected if present in sufficient numbers.

In the beginning of the disease it is difficult and often impossible to detect the bacilli in a single specimen of sputum, especially if the usual method of making cover-glass preparations is employed. This necessitates the examination of a considerable number of preparations from each of several specimens taken at short intervals (the first expectorated on consecutive mornings is preferable), in order that the tubercle-bacilli, if present, may be detected or their absence assured. It must be borne in mind, however, that a large number of examinations with negative results does not positively affirm the absence of the disease.

In order to obviate the difficulties suggested and to increase the efficiency of sputum-examination, a few methods have been devised that, while not altogether new, appear not to have received the attention that their merits warrant. These, together with the well-known methods, appear to furnish means sufficient for every physician to secure the greatest possible assistance to be derived from such examinations. As the methods vary almost according to the necessity of the case, the process should be selected that is best adapted to afford the special information desired. The primary qualifications of the method to be chosen may be said to be those that will enable the examiner—

1. To discover the presence of tubercle-bacilli when they are present in very small numbers, as in the beginning of the invasion, as well as in larger numbers in more advanced stages of the disease.

2. To preserve the sputum without decomposition until examined, so that the examination need not be neglected on account of a necessary delay in its execution.

3. To determine, especially in the beginning of the disease, as approximately as possible the extent of the invasion, as indicated by the number of tubercle-bacilli present.

As already stated, cover-glass preparations, made directly from the sputum and stained according to some well-established method, give very satisfactory

[1] Read before the Washington Microscopical Society, Feb. 2, 1892.

results in nearly all of the more advanced cases. It is in the earlier stages of the disease that other methods are desired for preparing the sputum.

The staining process will not be given in connection with each of the methods of treating the sputum about to be mentioned, as any of the known methods can be employed, but subsequently a staining process will be described that is applicable to them all and which on account of its simplicity and efficiency I prefer to any of the other excellent methods with which I am familiar.

Biedert's method. The object of this method is *to find the tubercle-bacilli when they are present in the sputum in small numbers.* In 1886, Biedert (1) called attention to the fact that smearing the crude sputum on the cover-glass and staining the same does not give accurate results, so far as detecting the number of bacilli is concerned. This is due to the fact that clumps of sputum that usually contain a larger number of tubercle-bacilli than the more liquid portion are so deeply stained as to obliterate their presence. In order to reduce the sputum to a more homogeneous consistence and at the same time to concentrate into a small mass the bacilli in a large quantity of sputum, Biedert mixed the sputum with twice its volume of a 2 per cent. solution of caustic potash or soda (soda being preferred) and boiled the mixture until perfectly fluid, after which it was placed in a conical glass and allowed to stand until a sediment had formed. Upon decanting the supernatant liquid, tubercle-bacilli otherwise difficult or impossible to find were readily discovered in stained cover-glass preparations made from the sediment in the bottom of the vessel. In a recent article, (2) Biedert again dwells on the value of this method. Although the process requires considerable time, the advantage to be gained by concentrating the tubercle-bacilli in a large quantity of sputum into a small sediment is obvious. This is also a convenient method for preserving sputum for subsequent examinations, as the bacteria remain unchanged for a considerable time.

Among the various processes that have been proposed and which are based upon the principles set forth by Biedert, the following may be mentioned:

Kaatzer (3) employed from a 1 to 3 per cent. solution of caustic soda or potash, which dissolved the cells, mucus, etc., but preserved the elastic fibers and bacteria. Cover-glass preparations were made from the sediment. He also employed a dilute solution of acetic acid to clear the preparations.

Kühne (4) added an equal volume of a saturated aqueous solution of borax to the sputum in order to overcome its viscidity and to obtain a thin even layer on the cover-glass. This mixture remained good for several weeks. Putrefaction is prevented and the tubercle-bacilli continue to stain nicely. He also used for less viscid sputum a concentrated aqueous solution of ammonium carbonate. Kühne also dwells upon the importance of estimating the number of tubercle-bacilli present.

Mühlhäuser (5) does not advise the use of stronger solutions of caustic potash than 2 per cent. He differs from Biedert in taking a smaller quantity of the sputum and adding from six to eight times its volume of the potash solution.

Savelieff's method. The object of this process is *to preserve the sputum until examined.* In 1890, Savelieff (6) suggested a very convenient method for preserving the sputum and examining it bacteriologically at a more or less remote date after its expectoration. It consists in having the patient expectorate in a dish containing 95 per cent. alcohol, in which medium the discharge can remain for several months. As the sputum is hardened in the alcohol (through dehydration and coagulation), Savelieff liquefies the coagulated sputum with a solution of caustic potash prior to making the cover-glass preparations. The technique employed was to remove a small lump of the coagulum, place it upon a slide and add a few drops of caustic potash solution which reduced the coagulum in a very few minutes to a more or less pasty consistency from which the preparations were made. After drying, they were rinsed in water, to remove the potash, and stained. The film was fixed by passing the cover-glass three times through the flame of an alcohol lamp or Bunsen burner. Thus prepared, the preparation was stained by some familiar method.

Determination of the number of tubercle-bacilli in the sputum. While the determination of the number of tubercle-bacilli in the sputum is of special interest in studying the progress of the disease during a course of treatment, its practical value from a diagnostic standpoint is of much less importance. Although the extent of invasion in the early stages of the disease may be approximately determined by the number of bacilli found, providing the estimation can be made sufficiently accurate, the important factor is to determine whether or not the parasite is present. Furthermore, the methods for determining simply the relative number of tubercle-bacilli in the sputum are either so crude as to be unreliable or so complicated as to be impracticable for the regular physician. Of the methods proposed only two will be mentioned, and these very briefly:

Nuttall (7) has recently devised a method by which the total number of tubercle-bacilli in the sputum can be very accurately determined. It consists in collecting the sputum of twenty-four hours in a scrupulously clean dish, reducing it to a homogeneous consistence by treating it with a solution of potash; the accurate measurement of the total quantity and the making of cover-glass preparations

with a definite amount of the mixture that is determined by means of a specially prepared buret. For the details of this quite simple and excellent process the reader is referred to the original article. In one of the cases reported by Nuttall that was treated with Koch's lymph and from which he estimated the bacilli contained in the sputum on sixteen different days extending over the period from January 10th to March 1st he found the maximum number of tubercle-bacilli in the sputum of a single day to be 4,312,581,280; the minimum number was a little less than two billions.

In order to compare the number of tubercle-bacilli found in the sputum from day to day, Gaffky[8] made the following classification, although he considered it impossible to even approximately estimate the number of bacilli. It is important to note that from each case he examined but one preparation each day. According to the number of bacilli found on the cover-glass he placed it in one of ten divisions into which he divided them:

	No. of bacilli.
1. On the whole cover-glass . .	1–4
2. On several fields an average of .	1
3. On one field an average of . .	1
4. " " " . .	2–3
5. " " " . .	4–6
6. " " " . .	7–12
7. " " rather many.	
8. " " many.	
9. " " very many.	
10. " " an enormous number.	

It is evident that from a single preparation no trustworthy results could be obtained, on account of the variation in the thickness of the layer of sputum on the cover-glass and the unequal distribution of the tubercle-bacilli throughout the sputum. I have frequently found some preparations to contain few or no bacilli, while others made from the same specimen of sputum would contain a very large number.

My notes upon a considerable number of examinations show that frequently, when the total number of tubercle-bacilli found on several cover-glass preparations made from the same specimen of sputum averaged from 1 to 4, the symptoms were barely sufficient to cause a suspicion of the invasion. I have found on an average as many as from 100 to 200 and even more bacilli on every preparation examined from the same specimen of sputum from patients whose physicians supposed them to be suffering from uncomplicated bronchitis. Even a larger number have been found before the physical signs and symptoms were sufficiently developed to admit of a diagnosis of tuberculosis. While my observations have been quite limited and the cases from which the examinations were made may have been exceptional, yet the facts exist and furnish ample illustration of the importance of an early, careful, and thorough examination of the sputum.

Sectioning sputum. Savelieff's method suggested the possibility of hardening and sectioning the sputum. It seemed that by this process it would be possible to determine more accurately the relation of the tubercle-bacilli to the yellowish, more dense balls in the sputum than it is possible to do by means of cover-glass preparations. This method of treating sputum, however, I found had been anticipated by Schmidt [9] in the study of the histologic structure of sputum from patients suffering from asthma. While engaged upon this subject, Gabritschewsky's [10] article on the sectioning of sputum in the study of the so-called Buhl cells, alveolar epithelium and giant-cells and Aronson and Philip's [11] article on the sectioning of sputum and the exhibition of eosinophile cells in the same have appeared. Gabritschewsky found giant-cells in the sputum from three out of four patients suffering from pulmonary tuberculosis. The method, however, has not heretofore been employed in the examination of sputum for tubercle-bacilli.

The method used by Gabritschewsky is as follows: The more dense balls in the freshly expectorated sputum were placed in the hardening reagents for the usual period of time, after which they were imbedded in celloidin, sectioned, stained, and mounted the same as sections of ordinary tissue. The hardening fluids used were alcohol (beginning with the weak and increasing to the strong), Müller's fluid, Flemming's solution, chromic acid, picric acid, and corrosive sublimate solutions. The sections were stained with saffranin, alum-carmine, and hematoxylin-eosin. Alcohol for hardening and hematoxylin-eosin for staining were recommended. Schmidt imbedded the sputum in paraffin as well as in celloidin. Aronson and Philip hardened the sputum first in a corrosive sublimate solution.

In my experiments I have found that the sputum becomes so extremely brittle when hardened in alcohol that it can be handled without crumbling only with the utmost care. In order to eliminate this difficulty a paper cup, about one-third of an inch in diameter and from one-half to one inch long and perforated with pinholes, was made. This was filled with fresh sputum and placed immediately in alcohol (first 70, later 95 per cent.). After it had been in the alcohol for a few days it was imbedded in paraffin by the usual method, the paper being removed after the infiltration and just prior to the imbedding. By this means a cylinder of sputum about one-third of an inch in diameter was secured. Very thin sections were easily cut, fastened to cover-glasses and subsequently treated as sections of animal tissue. Owing to their fragility, care

must be exercised in fastening the sections to the cover-glass or slide, or portions will become detached during the staining process. Sections stained after Gabbet's process showed the tubercle-bacilli very beautifully lying singly or in clumps between the cell-elements. In the sections examined, the bacilli were usually found in aggregations of small clumps. Sputum hardened in alcohol showed the tubercle-bacilli much better than when Müller's fluid was used, although the latter exhibited the cell-elements more distinctly. The degenerated alveolar cells (Buhl's cells) are brought out more clearly when a little picric acid is added to the alcohol. This method, however, requires too much time to be practicable when the examination is made for its aid in diagnosis only, but for the study of the histologic elements of the sputum it offers many desirable features.

Gabbet's staining process. (12) I have found this method to be very convenient and quite satisfactory in staining the tubercle-bacilli both in cover-glass preparations and in sections of tuberculous tissue. The stain is practically the same as that used in Ziehl-Neelsen's method, but the acid is combined with the methylene-blue solution, thus decolorizing and counter-staining at the same time. I have compared this method with those usually recommended and find that it gives equally as good results as the more lengthy processes. The formulæ for the solutions and the technique in their application are as follows:

(1) The stain—

Fuchsin, . . .	1 gram.
Absolute alcohol, . .	10 cubic centimeters.
5 per cent. carbolic acid,	100 cubic centimeters.

(2) The decolorizer and counter-stain—

Methylene-blue, . .	2 grams.
25 per cent. sulphuric acid,	100 cubic centimeters.

For cover-glass preparations. After the smeared cover-glasses have dried in the air, they are passed film upward three times through a flame, after which the film is covered with the stain, which is allowed to act for about two minutes. The preparation is then rinsed in water and stained for one minute with the second solution, when it is again rinsed in water. It can be examined at once or allowed to dry, when it can be permanently mounted in balsam.

For sections, it is necessary to allow the reagents to act for a longer time. Better results may be obtained by heating the staining fluid until steam is given off. This is easily done by passing the preparation covered with the staining fluid several times through a flame, or heating the solution in a watch-glass upon which the cover floats film downward.

The tubercle-bacilli will appear upon a microscopic examination (an oil immersion lens is desirable) as slender, more or less curved, rod-shaped bodies of a deep-red color, while the surrounding tissue and other bacteria present are stained a more or less intense blue. There are occasionally small oval or round bodies found in preparations of sputum that retain the fuchsin stain and which beginners have frequently mistaken for tubercle-bacilli.

The solutions used in this method may be kept in stock for a long time (two to three years), but better results are obtained when moderately fresh solutions are employed. I would add that a 10 per cent. solution of sulphuric acid is quite as good and, I think, preferable to the stronger one recommended in the method.

CONCLUSIONS.

1. In all cases of bronchial or lung disturbances (not due to a known disease) that do not yield readily to treatment ordinarily successful, the sputum should be examined for tubercle-bacilli.

2. If tubercle-bacilli are not found in properly stained cover-glass preparations made directly from the sputum, Biedert's method or some modification of it should be employed to concentrate the bacilli in a large quantity of the sputum.

3. Several specimens of sputum should be thoroughly examined in all suspected cases before a negative conclusion is reached. In all such cases, an examination should be made from time to time, in order to detect the possible invasion of the bacilli at a later date.

4. In making the examination, fresh sputum should be employed, if possible. If a long delay is necessary, the sputum can be preserved in a 2 per cent. potash solution or in alcohol as previously described.

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VACCINATION.

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THE discovery of the prophylactic value of vaccination is certainly one of the most interesting and important chapters in the history of medical science. A century has now elapsed since Jenner promulgated to the world the results of investigations in which he had long been engaged. During this period the practice has extended to every quarter of the globe, and its beneficent effects are beyond calculation. It is, indeed, a remarkable fact that in a disease so distinctly infectious as smallpox, the causative microörganism of which still eludes identification, a substitution-process should so long ago have been detected whereby a mild infection takes the place of a severe and loathsome disorder. The immunity conferred by vaccination, though not permanent, is, while it lasts, almost as complete as that due to smallpox itself, a fact well illustrated by the statistics of the Royal Military Asylum, at Chelsea, England. During forty-eight years, 5774 boys were admitted to the institution. Of this number 1950, on admission, bore evidences of having suffered from variola, while 3824 either had vaccination-scars or were at once re-vaccinated. Of those that had already had the disease 6.15 per thousand, and of those protected by vaccination 7.06 per thousand, subsequently contracted smallpox during their residence in the Asylum. In other words, neither the immunity due to an attack of vaccinia nor that due to an attack of variola is always permanent. Per contra, a single vaccination may have a lifelong effect.

It is noteworthy that, notwithstanding the high development to which bacteriologic and bacteriochemic studies have been carried, its most enlightened adherents have not as yet been able to devise prophylactic inoculation against scarlatina, typhoid fever, cerebro-spinal fever, croupous pneumonia, tuberculosis, or other dangerous infections.

The direct inoculation of variola, practised before the discovery of vaccination, was undoubtedly a step in advance, and decidedly reduced the gravity of the disease, including the disfigurement and blindness that it produced. Inoculation, however, was guilty of spreading the malady, while of inoculated cases 3 in 1000 terminated fatally. Death as a result of vaccination is almost unknown.

During the century, books and pamphlets have been issued from the press, and paper after paper has appeared in the journals upon the ever-interesting theme of vaccination. The progress of years seems to have no effect in diminishing these publications, yet, singular to relate, two eminent pathologists have recently arisen to deny the efficacy of Jenner's discovery. Critical disquisitions, however, must fall to the ground beside the simple statement of a few bare facts. Epidemics are not such veritable scourges now as they were during the eighteenth century. Scarred and blinded visages are now rarely seen upon the streets of the largest and most densely crowded cities; then, they were objects of every-day observation. In the Municipal Hospital of Philadelphia there were admitted, in 1871, 390 unvaccinated patients, of whom 254, *i. e.*, 65.5 per cent., died. During the same year, the total number of vaccinated cases was 799, and of these but 128, or only 16 per cent., perished. For upward of thirty years not a case of smallpox developed among the nurses of the London Smallpox Hospital, all the attendants of which are required to be re-vaccinated upon entrance. Re-vaccination is compulsory in the Prussian army. In forty years' time, less than 100 men in the entire organization fell victims to variola. Instances like these could be multiplied indefinitely, but to what use? I allude to the subject at all only to deplore the circumstance that men occupying high positions as teachers of science should lend countenance to the opposition of blind and ignorant zealots. Cavils concerning the nature and relationship of cow-pox, cattle-plague, grease, sheep-pox, etc., can never invalidate the cardinal truth, that successful vaccination protects against smallpox. It is, therefore, legitimate to conclude that true vaccinia and variola depend upon one and the same virus. This belief accords with what has been learned of late years concerning the nature of infectious disease, and with the results of experiments that are constantly being prosecuted with a view to producing immunity by the inoculation or injection of attenuated virus. It is along these lines that we may fairly hope for extension of prophylactic medicine in the future. The labors of Pasteur, Bouchard, Koch, Brieger, Behring and Kitasato, Klemperer, and others, lead us to believe that eventually practical measures will be devised, by the aid of which we shall have it in our power to counteract the development of some of the most fatal infectious disorders to which mankind is subject.

The employment of humanized virus is now nearly obsolete in this country. Some practitioners still cling to its use, and claim that the crust is both more reliable and more rapid in its effects than either the liquid or the dried animal lymph. In reply it may be urged that the action of the crust is also more severe. It is the testimony of Dr. Henry A. Martin, of Boston, that in two years after the introduction of the Beaugency virus into the United States, at

least 400,000 re-vaccinations had been performed by use of lymph derived from that source. Yet of this large number of operations in not a single case had death ensued from erysipelas or post-vaccine variola. Local and constitutional reaction is generally more severe when humanized virus is employed. One advantage may be imputed to the rapid action of the humanized lymph, and that is its ability to overtake and counteract variolous infection even when the latter has been at work for two or three days. We may, therefore, take advantage of this quality by employing humanized lymph after an individual has been exposed to contagion.

On the contrary, the crust stands convicted of two serious drawbacks: it is liable to occasion septicemia or to transmit syphilis. Vaccine syphilis is generally thought to be due to the blood adherent to the scab, but practically blood is always adherent to or mingled with the crust. It is also probable that this material is capable of propagating scrofulo-tuberculosis.

Bovine lymph is free from these serious objections, and certainly is efficient in preventing contagion. It may be less active, but, in view of its superior safety, the operation may, when necessary, be repeated until it succeeds. The animal matter has been used in two forms—as a liquid enclosed in capillary tubes, or dried upon quills or ivory points. In neither form does the lymph remain stable for any considerable period, though, when dried, its virtues are generally preserved for a longer period than when kept in the fluid state. This, perhaps, is not an exact statement. Undoubtedly, an exposed fluid more rapidly deteriorates than a thin layer of dried lymph, but, on the other hand, the former is put up in hermetically sealed glass tubes, so that while these remain intact it may be preserved for a long time from any cause that might bring about decomposition. The tube once opened, however, the lymph is liable to soon spoil, especially during the hot weather so common in the summer in this country.

Provided that it has undergone no change, fluid possesses some advantage over dried lymph as regards its efficiency of application. The latter needs to be dissolved in warm water while the surface is being abraded. Now, if it be rendered too fluid it may escape from the point. On the other hand, it may not be sufficiently dissolved. In the former case, much of it may be lost, and in the latter it may not readily be absorbed, and if by some accident too much blood flows from the abraded or scarified surface, the lymph may be prevented from entering the system. Either of these contingencies may be the cause of a failure that is unjustly blamed upon the quality of the matter. Pure fluid lymph is, consequently, preferable to the dried variety in that it is more easy of application. Either the scab or the incrustation upon points must be dissolved before it is used.

I have recently had placed in my hands for examination some specimens of a pure animal lymph, prepared by Dr. Pissin, State Councillor of Health, Berlin, at his Institute for Animal Vaccination, founded in 1865. So highly is it esteemed in the country of its origin, that it is exclusively employed as the material for vaccination and re-vaccination in the German army. It is obtained solely by calf-to-calf vaccination. The animals are subjected to rigid examination, and every possible source of impurity and contamination is carefully eliminated.

This lymph is put up in two forms. First, the *pure lymph*, which is a product of constant and unvarying activity, obtained directly from the calf. It should be used in a comparatively fresh condition, that is to say, within from four to six weeks after the date of preparation. This is a beautifully limpid fluid, almost as colorless as water, and is enclosed in hermetically sealed glass tubes. The *emulsified lymph* is prepared from the pure material by a special process. This preparation is a little thicker than the pure lymph, and is slightly turbid. It is equally effective, is far more stable, and retains its power for an indefinite period if the tubes are kept in a cool place. For many years, it is claimed, the results with Dr. Pissin's lymph have been 100 per cent. of successes in primary vaccinations, and from 80 to 90 per cent. in re-vaccinations. The materials are put up in tubes of different sizes, containing a sufficient quantity for five, ten, or twenty-five vaccinations.

The method in which it is used is as follows: The skin is cleansed with soap and water at the spot selected for the operation, and wiped quite dry. The extremities of the tube are then broken off, and a sufficient quantity of the lymph blown upon the skin, preferably upon four separate places. Then with a blunt lancet, or darning-needle, previously disinfected by passing through the flame of a spirit-lamp, the lymph is scratched in, care being taken not to abrade the epidermis, any effusion of blood being undesirable. The part should be allowed to dry before the clothing is readjusted, and should not be washed again for a week.

I have made use of both forms of this lymph, with entire success, and find that the claims made for it are borne out by my own experience. In every case the vaccine lesion was perfectly typical and unattended by any unusual local or constitutional phenomena. These tests exemplify not only the efficiency of the preparation, which is, of course, the chief point to be considered, but also incidentally the preservative influence of the sealed tubes—for the fine lymph, which is the least stable, did not

reach me until eight weeks after it had been received by the English agent, and it must have been at least a few days old when it first came into his possession. As regards fixity, therefore, it must be regarded as the equal if not the superior of lymph dried upon points. The emulsion that I employed was a fresher sample, being about two weeks old. Both varieties were entirely efficient.

The observations of several friends, to whom I distributed specimens of the lymph, corresponded precisely with my own, and we can therefore corroborate the favorable reports of foreign vaccinators regarding the preparation. I see but one objection to the article, and that simply concerns its mode of application, not its virtue. There is likely to be a waste of the fluid in the act of blowing, and some difficulty in effectually resealing the tubes.

THE INFLUENCE OF THE DOCTRINE OF CONTAGION UPON THE DEATH-RATE FROM TUBERCULOSIS IN THE CITY OF PHILADELPHIA.

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SINCE the discovery of the bacillus tuberculosis by Koch in 1882, the theory of the contagiousness of tuberculosis has more or less attracted the attention of the civilized world—not that the question involved was a new one, for it had been debated and re-debated both by the medical profession and by governments for centuries. It was, however, being approached in a new way, and it was the conclusiveness of the new evidence more than the question itself that arrested attention.

Thanks to the daily newspapers and the intelligence of the people, the practical measures that logically have grown out of the adoption of the theory are daily finding more advocates in the city of Philadelphia. During the first few years that followed immediately upon Koch's discovery, the medical profession stood out almost to a man against the theory. Now, however, the profession is nearly unanimous in its favor, and everywhere preventive measures are being introduced upon the suggestion of medical practitioners.

What has been the result of this propagation of the theory of the contagiousness of tuberculosis and of the partial and imperfect effort at prevention? If tuberculosis is contagious, we ought to have some result from even this little effort.

We have in the city of Philadelphia a record of mortality statistics from the year 1861 to the present time. In the accompanying table I give the population, the general mortality, the mortality-rate per 1000 living people, the mortality and the mortality-rate per 1000 living people from pulmonary tuberculosis for each year since 1861. It will be seen from this table that during the thirty years from 1861 to 1891 there was no real and continuous reduction in the mortality-rate from pulmonary tuberculosis until 1885,[1] and that since that time there has been a gradual and continuous reduction. The importance of this reduction will be emphasized, too, when we bear in mind that during the last three years of this time we have had an epidemic of influenza, which materially increased the mortality from pulmonary tuberculosis.

MORTALITY OF PHILADELPHIA.

Year.	Population.	Deaths.	Deaths to 1000 living.	Deaths from pulmonary tuberculosis.	Deaths from pulmonary tuberculosis to 1000 living
1861	576,408	13,540	23.49	1,817	3.152
1862	587,287	13,864	23.60	1,949	3.318
1863	598,166	14,220	23.73	1,955	3.268
1864	608,045	15,875	26.10	2,089	3.435
1865	618,924	15,633	25.25	2,026	3.370
1866	630,803	15,362	22.80	1,944	3.081
1867	640,682	12,660	19.76	1,947	3.038
1868	651,561	13,391	20.39	1,995	3.061
1869	662,440	13,428	20.27	1,975	2.981
1870	674,022	15,317	22.72	2,308	3.424
1871	700,000	15,485	22.12	2,337	3.195
1872	725,000	18,987	21.19	2,330	3 213
1873	750,000	15,224	26.29	2,291	3.054
1874	775,000	15,238	19.66	2,304	3.118
1875	800,000	17,805	22.25	2,359	2.948
1876	825,594	18,892	22.88	2,676	3.241
1877	850,856	16,004	18.81	2,349	2.760
1878	876,118	15,743	17.97	2,491	2.843
1879	901,380	15,473	17.17	2,481	2.741
1880	846,980	17,711	20.91	2,692	3.178
1881	868,000	19,515	22.48	2,768	3.188
1882	886,539	20,059	22.62	2,809	3.168
1883	907,041	20,076	22.13	2,798	3.084
1884	927,995	19,999	21.55	2,801	3.018
1885	949,432	21,392	22.53	2,821	2.971
1886	971,363	20,005	20.59	2,834	2.927
1887	993,801	21,719	21.85	2,800	2.817
1888	1,016,758	20,372	20.04	2,695	2.650
1889	1,040,245	20,536	19.74	2,532	2.434
1890	1,046,964	21,732	20.76	2,764	2.640
1891	1,069,264	23,367	21.85	2,624	2.454

If we divide the thirty years into decades, and carefully study the population and the mortality-rate from pulmonary tuberculosis side by side, we will be able to note the following interesting facts. The mortality-rate from pulmonary tuberculosis rises and falls at intervals during each decade, but much more markedly so during the first and second than during the third. This phenomenon is partly due to mistakes in the estimates in population, as will be seen by a scrutiny of the population-column, and is partly incidental to tuberculosis, as shown in my paper on the "Contagiousness of Phthisis."[2]

During the first decade the estimates of population are nearly correct, and we have the natural rise and fall in the mortality-rate well illustrated. During

[1] The slight reduction between 1881 and 1885 is probably mainly due to the natural rise and fall in the mortality of the disease.

[2] Transactions of the Medical Society of the State of Pennsylvania, 1888.

the second decade the estimates in population are very much too high, and as each year has not only the over-estimate of population but also the accumulated excess of the preceding years, the mortality-rate becomes progressively vitiated during this decade. It will be seen, however, that the general appearance of the mortality-rate from tuberculosis during this decade is about the same as that of the preceding, registering the same rises and falls. Were the estimated population correct, it would show almost identically the same figures, as will be seen by referring to the column giving the gross number of deaths from pulmonary tuberculosis. During the third decade the estimates in population are likewise a trifle too high, which is to be borne in mind in studying the mortality-rate; but even allowing for this, it will be seen that the rate for the decade differs materially from that of the preceding two. There is but a single rise and there is a gradual and permanent reduction.

In the first and second decades the variation in the mortality-rate is really a rise above the starting-point, and a drop back to it, whilst in the third decade there is a gradual and continuous decline. In 1861, the mortality rate was 3.152; in 1871 it was 3.195; in 1881, it was 3.188, whilst in 1891 it was 2.454. During the decade between 1861 and 1871, the rate dropped below 3 per 1000 only once, namely in 1869, when it was 2.981. This reduction was in part due to a slightly exaggerated population, in part to the generally low mortality-rate from all diseases for the year, and in part no doubt to the natural variation in the mortality from the disease. During the decade between 1871 and 1881 the rate dropped below 3 per 1000—in 1875, when it was 2.948; in 1877, when it was 2.760; in 1878, when it was 2.843; and in 1879, when it was 2.741. During all these years, the apparently lower rate was really due to an over-estimate of the population, as will be shown by a careful study of the population-column and the column giving the gross number of deaths from pulmonary tuberculosis. The census returns for 1880 make the population nearly 60,000 below the estimated population for 1879, and the gross returns from pulmonary tuberculosis during the decade show a constant increase from 1871 to 1881. Were the mortality-rates for the years during this decade computed on the basis of the correct population, it would probably at no time go below 3 per 1000. During the decade between 1881 and 1891, there is a gradual diminution from 3.188 in 1881 to 2.454 in 1891. It will be seen that there is a reduction every year except during the year 1890, when there is a slight increase. The increase for this year is partly due to over-estimated population during the preceding years, and partly due to influenza.

If we study the mortality-rates from pulmonary tuberculosis side by side with the number of deaths from the disease and the population for the thirty years as a whole, we shall see that during the entire period there has been no material decrease in the death-rate from pulmonary tuberculosis until the last few years, and that the decrease becomes more rapid as we approach the present year. The actual decrease from 1881 to 1891 is 0.734 per 1000 of living people, which with our present population means a saving of 784 lives a year.

To what can this most fortunate reduction in our mortality from pulmonary tuberculosis be ascribed? Upon the theory that the disease is contagious, it is easily understood, and upon no other can it be explained. Since the question of the contagiousness of tuberculosis has been discussed in the newspapers, most people, even though they may not have believed in the contagiousness, have adopted preventive measures. The majority of physicians have, moreover, during recent years strongly urged preventive measures when attending persons suffering from the disease. The effect of these efforts is showing itself in a reduced mortality-rate. That so excellent a result should follow such trifling efforts is in accordance with what we know about the preventability of tuberculosis. Owing to the fact that the contagion is necessarily confined to the pus given off from a tuberculous ulcer or broken-down nodule, tuberculosis is of all diseases the most easily preventable. All that is necessary is to confine and destroy this pus, and the most intimate relations between sick and well can be safely maintained.

736 PINE STREET

THREE FATAL CASES OF CEREBRO-SPINAL MENINGITIS, WITH AUTOPSIES.

BY HERMAN B. ALLYN, M.D.,
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I DESIRE to report these three cases because they occurred immediately following a widespread epidemic of influenza, in which cerebro-spinal symptoms were among the most characteristic features of the disease. At such a time, the possibility of mistaking the graver for the milder affection is much more likely to occur, especially when one is not on his guard. These cases may, therefore, serve a useful purpose in the way of warning.

The first patient was a man, forty years old, married, and engaged in running coal-cars at Greenwich Point. After working for twenty-nine consecutive days, he awoke, on the morning of February 1st, with a headache, which became worse, and after breakfast he was suddenly seized with severe pain in his right ankle. He went to Greenwich Point to get excused for the day, and on his way home—a long walk being necessary—he became so weak in

his legs and feet that he fell down. He lay on the ground for three hours, unable to rise, and vomiting profusely, and was possibly unconscious part of the time. A passing driver roused him, and, between driving and walking, he managed at last to get home in an extremely prostrated condition. He complained of pains in his knees, ankles, back, and head—pain in the latter being most intense. He was delirious during Monday night; and between three and four o'clock the next morning became unconscious, with rigid limbs and clenched teeth. This comatose condition lasted several hours and then gave place to delirium, from which the patient was never afterward wholly free.

In addition to the local pains he had general hyperesthesia. For a few nights the delirium was maniacal, the patient fighting with his attendants and jumping out of bed. Insomnia was persistent.

On Friday, an herpetic eruption appeared on the lower lip, and on the right wrist there were some forty or fifty papules, which subsequently became pustules, and then dried up. The wrist was stiff, tender, and somewhat swollen. The fever was moderate, the pulse under 90, and the respiration about 20. There was marked tenderness along the spine, especially in the lumbar region and at the nape of the neck. There was never any opisthotonos, retraction of the head, or convulsions. The lungs and heart were free from disease. Constipation was obstinate. The urine contained the merest trace of albumin and no casts. The conjunctivæ were injected.

Gradually a typical ataxic typhoid condition developed, the temperature rose, the pulse and respiration became more frequent, delirium was persistent, and it was increasingly difficult to feed him.

On February 18, he was completely comatose, with very high fever and moist skin; pulse, 160; respiration, 64. He died after an illness of eighteen days.

The autopsy was held the same evening by Dr. Jameson, assisted by Dr. W. S. Carter and myself. The heart, lungs, liver, spleen, and intestines presented nothing abnormal. There was only one kidney, and that was the seat of acute and chronic nephritis.

The brain itself appeared normal, except for some softening. The lymph-spaces of the pia were distended, and the arachnoid and pia injected. At the base, particularly surrounding the medulla, the arachnoid and pia were inflamed, the pia being adherent to the medulla, pons, and cerebellum and to the upper portion of the cord. A small quantity of lymph was found, particularly around the circle of Willis and the anterior perforated space. The blood was fluid. No cultures were attempted.

The second patient was a healthy man, twenty-eight years old, who was called in to care for the first patient at night. After several days of this watching, on February 5th, he complained at dinner of having pain in his back. He then went out into the back yard and while there fainted. He regained consciousness, and went upstairs to bed, complaining of being cold and of intense headache, backache, and pains "all over." The pain in the head was agonizing. Explosive vomiting occurred twice. Delirium was sportive and jocular in type. He sang a comic song, got out of bed to obtain a glass of cold water, poured it over his head, and, after making an intelligent reply to a question, was supposed to be sleeping quietly. He was found dead at twenty minutes past four, his illness having lasted about three days.

In a very short time after death, the back, from the shoulders to the buttocks, was purple from effused blood. Rigor mortis set in very early.

The autopsy was held on the following day by Dr. T. J. Ellinger, assisted by myself. Only the brain and cord were examined.

The dura mater was adherent, though not tightly, to the skull. The pia was everywhere adherent to the brain. From about the anterior temporal convolutions posteriorly the lymph-spaces in the pia were much distended with yellow lymph. The injection of the pia and arachnoid gave the brain a bright-red appearance, contrasting strongly with the empty blue veins. The brain itself was anemic. The blood wherever found was black and fluid. The inflammatory adhesions were especially well marked at the base, over the medulla and pons.

The spinal canal was full of black, fluid blood; the upper portion of the cord was much softened. The spinal dura had to be stripped from the walls of the canal. There were some flakes of lymph upon the membranes. Gelatin test-tubes were inoculated with the lymph.

The third patient was a sister of the first patient. She was forty-eight years old. There had been, as far as could be ascertained, no communication between sister and brother. She went to bed on the night of March 6th apparently perfectly well, except that she complained slightly of pains in her joints. She had eaten very heartily of turkey. During the night she was seized with a chill, with vomiting and purging, but no one knew of her illness until about five o'clock the next morning. I saw her first about 4 P.M., March 7th. Vomiting and purging had ceased; she was extremely weak, with cold skin and feeble, frequent pulse. The conjunctivæ were injected and the pupils contracted. The patient had no pain, except in the forehead. She continued conscious and quiet until twelve o'clock midnight, when she became comatose; pulse, 160; respiration, 40. She died in the same condition at 2.45 A.M., her illness having lasted about twenty-four hours.

The autopsy was made by the Coroner's physician the same evening. All the organs were soft and friable, with acute parenchymatous degeneration. The stomach and intestines showed marked inflammation. The mucous membrane was inflamed and softened and appeared rough, as though stripped of its epithelium. The dura was moderately adherent to the skull. The pia and arachnoid were thickened, and the outer surface had a gelatinous appearance, that next to the brain being much injected, but not adherent to the brain over the cortex. The lymph-spaces were full, the veins empty. There was an unusual amount of fluid in the brain, and the brain itself was much softened. At the base,

the same lesions were found as in the other cases, but were not so marked.

It is remarkable that these three cases occurred practically in one family, and that all of the patients were adults. The first case progressed gradually to a fatal issue, lasting eighteen days. The second was fulminating, lasting only three days. The third presented all the symptoms of acute toxic gastro-enteritis, with collapse and death. It would not have been regarded as a case of meningitis but for the findings at the autopsy.

The diagnosis from influenza, with which cerebro-spinal meningitis was most likely to be confounded, can be made in most cases by noting the occurrence, at the onset of the disease, of chill, vomiting, and faintness, accompanied or followed immediately by headache and backache, the headache being more frequently occipital than is the headache of influenza. Subsequently there are hyperesthesia of the skin, stiffness and tenderness of the muscles of the neck, injected conjunctivæ, delirium, and frequently convulsions. Eruptions, most frequently herpetic or petechial, are absent as often present. The occurrence of other cases of the same kind stamps the disease as epidemic cerebro-spinal meningitis. Coma sometimes alternates with delirium and usually succeeds it in lingering fatal cases.

The ages of the patients probably account for the absence of convulsions.

ORIGINAL ADDRESS.

REMARKS ON SPECIALISM.

Made at the fourth annual meeting of the American Pediatric Society, Boston, May 2, 1892.

BY WILLIAM OSLER, M.D.,
PROFESSOR OF MEDICINE IN THE JOHNS HOPKINS UNIVERSITY, BALTIMORE.

GENTLEMEN: First let me express my gratitude for your kindness in conferring upon me the honor of your presidency—an honor enhanced by the standing and character of the men who have previously occupied this chair. To have selected as your presiding officer one whose work has lain in the wide field of general medicine, is an indication that you duly appreciate the relation of the special subject in which we are now interested, and to which this Society is devoted. The diseases incident to infancy and childhood are so varied, covering every department of internal medicine, as well as of surgery, that the broad distinctions emphasized by the names physician and surgeon suffice to characterize us, and happily we have not yet been stamped with a distinctive appellation, under which so many of our colleagues in other lines labor. In the extraordinary development of modern medicine, some limitation in work is inevitable, and although as practitioners and teachers we are all, to some degree, necessarily interested in the diseases of children, there are among us those who find in such diseases their chief occupation, and our Society is but an organized expression of a natural desire to unite for the purposes of study.

On an occasion of this kind it seems best to me not to discuss any particular subject in children's diseases, as such discussion is almost certain to come up subsequently in our meetings, but to deal with some problem of general interest, with bearings, however, upon our organization. In comparison with the older countries of Europe, specialism may truly be said to be the most distinctive feature in the medical profession of America; and it may not be inappropriate to consider here a few of its advantages and disadvantages.

"That which has been is that which shall be." Medicine may be said to have begun with specialists. The Ebers Papyrus is largely taken up with the consideration of local diseases; and centuries later we find in Greece certain individuals treating special ailments, and Aristophanes satirizes a "rectum specialist" in a way not unlike our comic journals would "poke fun" at an oculist or an aurist. The tail of our emblematic snake has returned into his mouth: at no age has specialism been so rife. To follow its gradual development during the present century would take more time than is at my disposal, and would not be a profitable task. The rapid increase of knowledge has made concentration in work a necessity; specialism is here, and here to stay.

The advantages to the profession that have followed this differentiation have nowhere been more striking than in this country, and the earnest workers in ophthalmology, gynecology, dermatology, and other branches have contributed largely to inculcate the idea of *thoroughness*, the necessity for which is likely to be lost sight of in the hurry and bustle incident to the growth of a nation. Better work is done all along the line; a shallow diffuseness has given place to the clearness and definiteness that comes from accurate study in a limited field. The day has gone by for Admirable Crichtons, and although we have in our ranks a few notable illustrations of men that have become distinguished authorities in eye and skin diseases, and upon syphilis, without sacrificing their interests in general surgery, such are necessarily rare, and unfortunately, from the very circumstances of the case likely to become more uncommon. Then, how comforting to the general practitioner is the wise counsel of the specialist. We take him a case that has puzzled and annoyed us, the diagnosis of which is uncertain, and we consult in vain the unwritten records of our experience and the printed records of our books. He labels it in a few minutes as a coleopterist would a beetle, and we feel grateful for the accuracy of his information and happy in the possession of the label; and if sometimes, standing like Aaron between life and death, he illumines too brightly the darkness of our ignorance, are we not as often beholden to him for gentle dealing?

It is almost unnecessary to remark that the public in which we live and move has not been slow to recognize the advantage of a division of labor in the field of medicine. The desire for expert knowledge is, however, now so general that there is a grave danger lest the family physician should become, in some places, a relic of the past. It must indeed be a comfort to thousands

to feel that in the serious emergencies of life expert skill is so freely available. Perhaps, as specialists, no class in our profession has been more roundly abused for meddlesome work than the gynecologists, and yet what shall not be forgiven to the men that, as a direct outcome of the very operative details that have received the bitterest criticism, have learned to recognize tubal gestation, and are to-day saving lives that otherwise would inevitably have been lost? I have known Formad to show in one year, at the Philadelphia Pathological Society, ten or twelve examples of ruptured tubal pregnancy obtained in medico-legal work (sudden death) in that city. The benefits the public reaps from specialism may be gathered from the fact that in a not much longer period of time I have seen seven specimens of tubal gestation, not removed by the pathologist, but by the gynecologist, with the saving of five lives. The conservatism that branded ovariotomists as butchers and belly-rippers is not yet dead among us, and I say it frankly, to our shame, that it has not always been professional encouragement that has supported daring advances on special lines. Humanity owes a great debt of gratitude to the devoted men that have striven during the past half-century for exactness in knowledge and for the practical application in all departments, a debt too great to pay, too great, one sometimes feels, even to acknowledge.

Specialism is not, however, without disadvantages. A radical error at the outset is the failure to recognize that the results of specialized observation are, at best, only partial truths that require to be correlated with facts obtained by wider study. The various organs, the diseases of which are subdivided for treatment, are not isolated, but complex parts of a complex whole, and every day's experience brings home the truth of the saying: "When one member suffers, all the members suffer with it." Plato must have discussed this very question with his bright friends in the profession—Eryximachus, perhaps—or he could never have put the following words into the mouth of Socrates: "I dare say that you may have heard eminent physicians say to a patient who comes to them with bad eyes, that they cannot cure his eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone, and not the rest of the body also, is the height of folly. And arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together. Did you ever observe that this is what they say?"[1] A paragraph that embodies the law and the gospel for specialists.

A serious danger is the attempt to manufacture rapidly a highly complex structure from ill-seasoned material. The more speedy success that often comes from the cultivation of a specialty is a strong incentive to young men to adopt early a particular line of work. How infrequently are we consulted by sucklings in our ranks as to the most likely branch in which to succeed, or a student, with the brazen assurance that only ignorance can give, announces that he intends to be a gynecologist or an oculist. No more dangerous members of our profession exist than those born in it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease, no amount of technical skill can hide from the keen eyes of colleagues defects that too often require the arts of the charlatan to hide from the public.

In the cultivation of a specialty as an *art* there is a tendency to develop a narrow and pedantic spirit; and the man that, year in and year out, examines eyes, palpates ovaries, or tunnels urethræ, without regard to the wider influence upon which his art rests, is likely, insensibly perhaps, but none the less surely, to acquire the attitude of mind of the old Scotch shoemaker, who, in response to the Dominie's suggestions about the weightier matters of life, asked "D'ye ken leather?" There is not a single department of which the study does not carry with it the correction of this most lamentable tendency. Problems in physiology and pathology touch at every point the commonest affections, and exercised in these, if only in the early years of professional life, the man is chastened, so to speak, and can never, even in the daily round of a most exacting practice, degenerate into a money-making machine. And let the younger of my hearers lay this to heart: Scan the lives of say twenty of the men most prominent in special lines of medicine and surgery to-day in this country, and you will find, with scarcely an exception, the early years devoted to anatomic, physiologic, or pathologic studies. They rose high because the foundations were deep. The most distinguished oculists have been trained in physiology and pathology, and some, like Sir William Bowman, have had reputations so preëminent in several departments that the identity of the physiologist has been lost in the ophthalmologist.

The work of the specialist encroaches more and more upon that of the general practitioner, and this condition, though in many ways to be regretted, is not likely to be changed. I have known the head of a household pay in the course of a year for the professional services of six physicians, a gynecologist, an oculist, a laryngologist, a dermatologist, and a surgeon. What remained after this partition of the great practitioner came in sixth and looked after the children. It is interesting to note that to this one pertains, to a large extent, the functions of the old family physician, and further advice is usually sought through him, or at his suggestion. In the evolution of the specialist the "children's doctor" is the last to appear, not because of any extreme differentiation, but he represents a vestigial remnant of what was formerly in cities the general practitioner. May I not say that there are members of our Society whose interest in their work is largely due to this new feature in domestic life? In the division of the household among our brethren, the children alone remain, and fortunately their ailments are too diversified to allow of much specialization.

After all, though specialism is rife and has so carved the body of physic that Hippocrates would scarcely recognize it, and though its sounds go out loudly and echo in the journal and society reports, nevertheless I would boldly make claim for a wider diffusion of its benefits. Of dwellers in cities arrogance is a special trait, and we discuss problems in a surely-we-are-the-people style, forgetting that outside lie the greater

[1] Charmides: Jowett's translation.

millions equally precious to Æsculapius, and under the care of men that cannot specialize, who must be able to set fractures, perform version, treat iritis as well as fevers, ear-ache as well as itch. What of the benefits of specialism to this larger class from the ranks of which the cities are replenished and the health of which is so essential to the nation? The out-door departments of the hospital and consulting rooms of the city physicians tell of the necessity of special knowledge to these people, particularly in emergencies and in the grave and more unusual forms of disease; but those that can thus avail themselves form but a fraction of the number that require technical skill for the purpose of diagnosis or treatment. Very little additional knowledge enables the general practitioner to grapple with a large proportion of the cases that in cities come under the care of the specialist. The question resolves itself into one of education. It is impossible in three collegiate sessions to bring men beyond the superficial routine, but in a more prolonged period of study—as I know from experience—the student can be taught practically in the wards and in the dispensary enough of the technique of the specialist to give at least a foundation upon which to work. He should leave the schools knowing the practical application of the microscope, the ophthalmoscope, and the laryngoscope, and in these and other lines he should have proceeded to the stage in which he recognizes the limitations of his knowledge. Such a man in general practice should know a "choked disc" when he sees it; the examination for tube-casts should be a familiar everyday task; and he should be able to tell whether a vocal band is paralyzed or not. A serious obstacle to this happy consummation—which can be reached in a well-ordered system of education—is the absence, in the early years of practice, of material upon which to freshen the memory and to "keep the hand in"; but the man that once, as a student, has reached a certain point always retains some measure of the old facility. The post-graduate schools have done much to enable men to revive and to acquire technical skill, and have been of great service in generalizing special knowledge. In the practice of a good all-round man, the number of cases demanding the help of a specialist is, after all, not very great. The ordinary run of nervous disorders should be recognized; adenoid vegetations should be treated with the skill of the laryngologist; he should know enough not to tinker with a case of glaucoma; and though he may not differentiate a pus tube from tubal pregnancy, he should in this, as in other details, have learned to know his limits and be ready to seek advice.

With the revival and extension of education, the benefits of specialism will become more widely diffused, and to this end the efforts of colleges and hospitals should be directed.

The organization of societies for the study of particular diseases has of late been a very noticeable feature in the professional life of this country. Since the foundation of the Ophthalmological Society more than a dozen associations have been formed, and their union in a triennial congress has proved a remarkable success. These societies stimulate work, promote good-fellowship, and materially aid in maintaining the standard of professional scholarship. They are, as a rule, exclusive bodies, limited in membership, and demanding for admission evidence of special fitness. This point is sometimes urged against them, but the members exercise no arbitrary privilege in asking of candidates familiarity with the subject and evidence of ability to contribute to the general store of knowledge. In some of the specialties these societies have been most useful in disciplining men that have traduced, not the written code but the unwritten traditions of our craft, acting as if they were venders of wares to be hawked in the market-places.

Our own Society may be regarded as the outcome of a notable revival, during the past few years, of interest in the study of the diseases of children. The existence of a special journal devoted to pediatrics and the successful issue of a large cyclopedia of the *Diseases of Children*, testify to the appreciation on the part of the profession of the necessity for more accurate study of this branch. The Society offers to men who are working in, and teaching pediatrics, an opportunity of knowing each other, of discussing subjects of common interest, and through the medium of their publications making general the more special details of value in practice.

The program before you indicates clearly that we are all workers in general medicine; and may the characters of the papers and the discussions be the best justification of the existence of an organization devoted to the study of a particular section of that field.

ORIGINAL LECTURE.

NON-FATAL LACERATION OF THE SPINAL CORD —INTRA-DURAL HEMORRHAGE, WITH UNDISCOVERED COMPRESSION.

Delivered at the Buffalo General Hospital, Surgical Clinic.

BY ROSWELL PARK, M.D.

ON March 2d, a portion of the Niagara Falls tunnel caved in, and two men were killed by the falling débris. A third man was struck in the dorsal region by a beam, had the right humerus fractured in two places, and was bruised about the face and body. His lower limbs were found to be paralyzed and without sensation. He was sent by train to the Buffalo General Hospital and examined by Dr. Parmenter, who found a depression in the course of the spinal column, indicating either fracture or dislocation. On gentle manipulation crepitus was elicited, showing that there was at least fracture, if not also dislocation of the vertebræ. The injury to the cord must have been at about the level of the tenth or eleventh dorsal vertebra. Sensation was preserved to a line just above the pubes in front, passing near the anterior superior iliac spines at the sides, the limitation of sensibility corresponding to the course of the spinal nerves.

Obviously, without operation it could not be determined whether the cord was simply compressed or also lacerated. I, therefore, cut down over the line of the lower dorsal and upper lumbar vertebræ. Almost as soon as the knife passed through the skin, at least as soon as the fascia was penetrated, it was evident that the tissues were greatly lacerated, and lying upon the

bone I found a piece of spinal cord. This put almost a hopeless aspect on the case, but I thought it best to continue the exploration, and entered the spinal canal by removing the arches of the tenth, eleventh, and twelfth dorsal vertebræ, finding the canal—which in this situation is about the size of my little finger—filled with shreds of spinal cord and blood. There was still a portion of the cord apparently intact. After removing the projecting bone and other sources of irritation and compression, the wound was closed and dressed antiseptically. Judging from the mass of débris of the cord and clots found, the violence must have been extreme, and as only one spinous process was driven in, the traumatism must have been inflicted by the corner of a beam.

The man's temperature, three days after the injury, is only a little above 99°. He has had no disturbance following the operation. His paralysis is neither greater nor less than before. If septic meningitis were to ensue, I should expect it to-day, and as there are no signs of it, I infer that he will escape that danger. If so, he will probably get well after a fashion, but it will be a matter of extreme interest to note what reparative changes, if any, occur in the cord. The patient and his friends say that they would rather have him die than live in his present condition. The prognosis, as far as recovery of the functions of the cord is concerned, must necessarily be as unfavorable as possible.

(The patient subsequently made a good recovery, so far as the operation was concerned, the wound healing by first intention under one dressing. The only incident was a slight cystitis. The line of anesthesia descended a little, but otherwise the paraplegia remained unaltered.)

The second patient, thirty-seven years old, presents well-marked kyphotic curvature of the spine in the upper dorsal region, as the result of Pott's disease, the activity of which subsided many years ago, and which may be regarded as cured by ankylosis of the vertebræ. Otherwise he was in good health until March 18, 1892, when he was struck by a train and bruised about the back. The ambulance was immediately summoned. On its arrival, the patient was found to be but partially paralyzed, but within an hour he became completely so. The case is not yet twenty-four hours old, and now, upon examination, it will be seen that there is complete motor paralysis below the waist, and apparently complete loss of sensation. On careful examination, however, it appears that the anesthesia is simply cutaneous and that the patient has not lost the muscular sense. For instance, he cannot tell when the right foot is touched, but when it is firmly flexed or extended he is conscious of the movement. The muscular sense is less impaired on the right than on the left side. Tracing the line of cutaneous anesthesia, the evidence points to a lesion at about the level of the eleventh dorsal vertebra. We have to distinguish between fracture of the vertebræ, with compression of the spinal cord at this level, and an intra-spinal hemorrhage. The diagnosis is made mainly by relying on the history of accident and that which the ambulance-surgeon gives us. We are told positively that paralysis was not complete when the ambulance arrived, some twenty or thirty minutes after the accident, but that it became so within an hour afterward. This statement would seem susceptible of but one explanation, namely, that of hemorrhage, with the formation of a clot gradually increasing in size, and pressing more and more upon the cord. Whether this clot is extra-dural or intra-dural, or due to a lesion of the cord proper, it is impossible to say. The evidence, however, points to pressure upon the cord at the level indicated, and the patient has willingly assented to an endeavor to afford relief. Accordingly, I purpose performing laminectomy, or as it is sometimes called, trephining the spine—in other words, cutting down upon the spinal column, exposing the spinal canal, and probably opening the dura and examining the cord itself.

The patient being anesthetized, a long incision is made and the muscles on either side of the spinous processes of the ninth, tenth, eleventh, and twelfth dorsal vertebræ are separated and retracted, so as to expose in a measure the posterior surface of the spinal column. The spinous processes are removed with stout cutting-forceps, and the laminæ are divided with the forceps and chisel, until the spinal canal is open for a distance of six or seven centimeters. You will remember that there is a plexus of veins between the bony canal and the dura, and if the hemorrhage were extra-dural, we should expect to find here evidence in the shape of blood-clot. Little or nothing of this is apparent, and I shall next open the dura. The dura is opened by raising it at one point with a tenaculum, dividing it with a sharp-pointed knife, and slitting the membrane with a blunt bistoury. At the point where I raise the dura, it seems darker in color and gives the appearance of a dark mass seen through a nearly opaque membrane, although under the finger the sensation is not distinctive. Upon opening the dura, it is seen that there is a considerable quantity of effused blood, and upon clearing this away, the integrity of the cord itself does not seem materially impaired. Evidently, then, the diagnosis of hemorrhage was correct, and upon the removal of this laminated clot, we afford the patient a chance for recovery, of which he would otherwise have been deprived. If, now, there be no other lesion, and if no septic or other accident occur, we may regard his future as hopeful. In this instance I shall not close the dura carefully, but place only one or two stitches and trust further repair to natural processes. I do this for two reasons: First, because of the length of the procedure, since at this depth and working within narrow confines, an accurate closure would be most difficult and time-consuming, and unless the opening be accurately closed to prevent leakage there is no particular object in closing it at all. My second reason is that experience has taught me that the dura heals just about as well when not sutured as if it were sutured.

One other point about this patient I have not mentioned, namely, that from the time of the accident he has had bloody expectoration, and now, on physical examination there is found a limited area of dulness over the right lung. I do not detect crepitus, as from a broken rib, but, nevertheless, I cannot forget that some injury either to rib or lung, or both, may complicate the case in a most undesirable way. The extensive superficial wound is closed with two tiers of buried sutures of catgut and one superficial layer through the skin. Over this a carefully applied aseptic dressing is laid.

The patient lived about a week. The wound healed without complication, but the patient's paralytic condition was in nowise improved; his lung-trouble increased somewhat in extent, and he died apparently from marasmus and weakness as much as from any appreciable cause. On autopsy it was found that there had been no fracture and no serious injury to the cord at the level of the operation, but at a higher level, at the point of angular deformity to which attention was called, there had been fracture and displacement, with compression of the cord. There were no evidences of septic meningitis. During life there had been nothing, either in the way of tenderness or alteration in contour, to call attention to this higher lesion in the spine, and certainly a study of the nervous distribution of the paralyzed and non-paralyzed parts gave no indication that the primary cause of the paralysis was located here. Attention is called to this case as illustrating an unusual complication in spinal injuries, and as possibly pointing out a clear indication for operations in the future.

CLINICAL MEMORANDA.

CHOREA; ENDOCARDITIS; DEATH.[1]

BY H. K. AIKEN, M.D.,
OF LAURENS, S. C

THE following case is reported as affording some additional evidence upon the association of chorea with a rheumatic diathesis, and also as an illustration of the hereditary transmission of rheumatoid tendencies through three generations. In this instance a severe endocardial inflammation followed chorea, without the intervention of any arthritic symptoms.

On the evening of February 4, 1892, during the absence of the attending physician, I was asked to see B. J., a white female, ten years old. At my first visit the pale-faced, anemic child was lying crosswise in bed, with her chin flexed on her chest and the legs upon the abdomen. When approached by anyone, she begged to be let alone. Attempts at examination provoked fits of crying. The pulse was too rapid for me to count. Her tongue was coated with a pasty, white fur, its edges and tip being a deep red. The lips were cracked and fissured. The temperature taken in the axilla was 103°. The heart's action shook the chest-walls and was so tumultuous as to make a satisfactory physical exploration of the chest impossible at the time. The child had a slight cough, but there was no dulness on percussion; on auscultation the vesicular murmur was heard to be roughened. There were pain in the right iliac fossa, epistaxis, mental hebetude, a desire to be let alone, with a history of nausea and vomiting, together with irregular chills. Emaciation was marked and the adynamia profound. I prescribed a fever-mixture containing aconite, and left with a diagnosis of advanced typhoid fever almost settled upon. By the following morning the heart's action was reduced so that the condition of this organ could now be studied. There was at once apparent a soft, blowing, systolic murmur, heard best at the apex, and not transmitted to the back.

From the attending physician, who had now returned, I learned the previous history of the case, together with these additional facts: The child had been sick for six or eight weeks, with intervals of improvement. During the summer and fall of 1891 she had chorea, which entirely disappeared after the use of the officinal solution of potassium arsenite. The girl returned to school, but continued listless and complaining. Choreic movements again appeared in December, 1891, when she was put back on arsenic, and the dose increased to fifteen drops, t. i. d., before any edema was produced. The dose was then decreased, and arsenic, with the addition of an iron, quinine, and strychnine tonic, continued until all spasmodic movements had disappeared. During this period the child complained of pains in the muscles of her right leg, but these were ascribed to influenza, then prevalent. She had not shown choreic movements for a month. Her temperature had lately been ranging between 101° in the morning and 103.5° in the evening, with daily or tertian chills. The chill, or cold stage, would be followed by a typical hot stage, and a sweating stage. Cough first appeared during the week previously to my seeing her, and had been increasing in frequency. There was no expectoration. The child's mother had died in the same room, ten days before, of unmistakable pulmonary tuberculosis, of fourteen months' duration.

Reviewing all the facts in the case, it seemed that we had here to deal with either enteric fever, endocarditis, a malarial remittent, or tuberculosis florida. The diagnosis of endocarditis in a child of ten is not easy, and is masked by the resemblance of its symptoms to those of other and commoner diseases. I will briefly detail the steps by which such a diagnosis was arrived at in this instance.

Enteric fever was excluded—because, although the temperature made an evening rise and morning fall, the variations were too great; and because of the absence of eruption, diarrhea, and tympanites; the stools were solid and without peculiar odor.

In favor of a diagnosis of pulmonary tuberculosis was the fact that there had been ample opportunity for direct infection from mother to child. Both were sick in the same room; both were coughing; both emaciating. The absence of consolidation, however, the sudden onset of serious symptoms, and the high temperature-range seemed to exclude tuberculosis.

After the chills, the temperature would rise rapidly and decline with the sweating stage. In this locality, the possibility of a malarious influence cannot be overlooked; but a remittent was excluded, because quinine had no effect upon the fever; the prostration continued between the paroxysms. The season of the year was also against such a diagnosis—this section being almost free from malaria during the winter months.

A diagnosis of acute endocarditis was therefore made, based upon the past history, the irregular chills, nausea and vomiting, the high temperature and the overacting heart, with a soft bellows-like murmur of organic origin. The attending physician stated that he had repeatedly examined the heart and found no murmur. In this case, it must have developed rather suddenly, and was not perceptible until late in the disease, the time at which I was called to see the case. There were no evidences of pericarditis.

[1] Read before the Laurens County Medical Society, March 27, 1892.

Accepting this diagnosis, appropriate treatment was begun. As long as hypertrophy kept up, reliance was placed upon tincture of aconite with alkalies, principally potassium bicarbonate. A blister was applied to the precordium. On account of continuous nausea, it was with difficulty that enough medicine could be retained to produce any effect upon the advancing disease. The irritability of the stomach was best controlled by minute doses of calomel, which was also given for its antiphlogistic effect. When compensation began to fail, we employed digitalis, strophanthus, and alcoholic stimulants, but with little success. An unfavorable prognosis had been given the family, after which they gave up hope, and it was hard to get any treatment properly carried out. The child was so ill that they seemed indisposed to disturb her to give food or medicine. We endeavored to maintain nutrition by using peptonized milk, nourishing broths, and liquid beef-peptonoids. Despite our endeavors, the temperature continued high, the powers of circulation and assimilation gradually failed, until insomnia and general venous stasis closed the scene. Death took place rather suddenly, three weeks after the onset of the acute symptoms. An autopsy was not allowed, and so the diagnosis could not be verified.

The family history of this little patient is interesting. She belonged to a strongly neurotic family. Her mother's father and her father's father both suffered with rheumatism. Her father had a most obstinate attack of sciatica during the fall of 1891. A brother had chorea at the age of twelve. An older sister has also had chorea. Both recovered after treatment with arsenic. I am uncertain whether this case was one of simple or of septic endocarditis. The rigors, the high temperature, the early development of the typhoid state, would seem to point to a septic origin. But there was no wound, while the existence of a rheumatic diathesis can hardly be questioned.

Chorea is not uncommon here. The statement made by Dr. Mitchell, and often quoted, that the disease never occurs in the negro race, I had no reason to doubt until recently. A *negro* boy (not a mulatto) between twelve and fourteen years old, living on a farm in the country, was brought to me, suffering with chorea. He was given Fowler's solution of potassium arsenite, and improved. This is the routine treatment. The dose is at first from three to five drops, and is increased until the symptoms abate or the point of tolerance is reached.

MISTLETOE AS AN OXYTOCIC.

By HAMILTON P. HOWARD, M.D.,
OF BIG STONE GAP, VA.

DR. W. H. LONG, of the U. S. Marine-Hospital Service, in *New Preparations*, in 1878, claimed for mistletoe, as compared with ergot, for oxytocic purposes—first, that it acts more promptly and surely; secondly, that it produces *intermittent* uterine contractions, as opposed to *tonic* contractions, and for this reason it may be used in *any* stage of labor or in primiparæ. These claims he bases on an "extensive experience of its use between the years 1867 and 1878," and such was his uniform success with it in "hundreds of cases," that he reports, to use his own words: "It acts with so much more promptness and certainty than ergot that I have been using it exclusively for years." With equal earnestness Dr. Long also advocates the use of mistletoe in menorrhagia and post-partum hemorrhage and in hemoptysis.

A drug that could be depended upon to induce with certainty *intermittent* uterine action would prove a boon to the obstetrician, not only in cases in which the induction of labor was indicated, but also, and more particularly, when pains are absent at term or have ceased from atonicity of the uterus. I am induced to report my own limited experience of mistletoe in the hope that further trials and reports of it may be made.

Mrs. J. B. A., thirty-six years old, had a history of eight abortions and miscarriages — the last at eight months, the remainder dating between the third and the sixth month. The patient first came under my care at third month of gestation, and was with difficulty carried to full term, her pregnancy being complicated by frequent attacks of cardiac asthma and a prolonged siege of general peritonitis brought on by rupture of adhesions due to old pelvic inflammation. She gave, further, a history of protracted labors, with profuse and persistent post-partum hemorrhages, not only in the premature birth, but also in all the abortions and miscarriages. In her own words, "her pains always died out," and artificial aids to delivery had to be employed. The child at eight months was born only after a week of interrupted labor, and then was "removed"; and I gather that ergot was freely used in this instance.

In her last labor, the outcome of which was a well-nourished and healthy six-and-a-half-pound girl, I made use of mistletoe, using the fluid extract in one-dram doses at intervals of twenty minutes for four doses. The circumstances and nature of the case were such that I deem it quite a crucial test of the drug. During my absence in another part of the State her labor began, and, according to her own statement, the pains were the strongest she had ever felt; they, however, only persisted for from twelve to fifteen hours. On my return, five days later, I found her utterly devoid of pains, the os dilated to the size of a half-dollar, soft, and non-resistant. On introducing two fingers, which were readily admitted, I made out a normal L. O. A. position. After waiting for two weeks for a renewal of pains, which I was unable to induce either by uterine compression, digital dilatation of the os, or suppositories of quinine, belladonna, and strychnine, I determined to make a trial of mistletoe, of which I had secured a specimen of the fluid extract with a view to its possible use in this case. Twenty minutes after exhibition of the first dose I was gratified by the commencement of excellent dilating pains, and, giving the second dose, I returned to my office for my satchel. Half an hour later, on my return to my patient, I found the labor progressing most satisfactorily. I gave the other two doses at irregular intervals, when the pains seemed to become a little irregular and less strong, but more as a preventive than because imperatively needed. In a little over five hours after giving the first dose of mistletoe the labor, which had been characterized by typically normal uterine action both as to strength and regularity, was terminated, the third stage being ended by the pain which followed the expulsion of the child. The uterus contracted firmly and promptly, with virtually no hemorrhage.

In this case delivery was almost entirely dependent upon uterine action alone, the condition of her heart making sustained abdominal effort impossible—a condition which, I felt convinced, would have led to a fatal termination had the labor been unduly prolonged, there being a double mitral lesion and marked enlargement, and, I think, failing compensation. The fact of her being so entirely dependent upon unassisted uterine action, I think, adds evidence to the character of the pains induced.

The following case in evidence of the action of mistletoe as an oxytocic I am enabled to report through the courtesy of my friend, Dr. C. D. Kunkel, of this place, in whose practice it lately occurred:

——, non-pregnant, was prescribed teaspoonful doses of the following mixture at four-hour intervals: Ext. pichi fl., f℥iijss; ext. mistletoe fl., f℥jss. After taking four doses, containing seventy-two minims of mistletoe, she sent for Dr. Kunkel, complaining of violent "cramps," which, upon investigation and careful examination, were found to be due to characteristic "labor" pains. These pains persisted for from four to six hours, and were strong and regular. The drug had been given on account of its antispasmodic properties, with pichi, in a case of cystitis with violent tenesmus.

EXTENSIVE TREPHINING FOR THE RELIEF OF EPILEPSY FROM TRAUMATISM; COMPLETE RECOVERY.

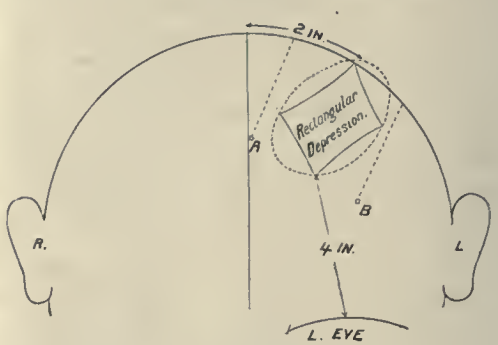
By J. T. BINKLEY, Jr., M.D.,
of Chicago, Illinois.

In March, 1891, O. D., thirty-seven years old, applied for treatment for fits. In 1875 he was hit upon the head with a hatchet, and was unconscious for several hours. He was able to be out after a few days, but had two or three convulsions monthly until June, 1883, when Dr. Bevan, of Gadson, Ala., removed a few small pieces of bone. He was then much improved, but not entirely relieved. On the 11th of July, 1885, Dr. Sheminick, of St. Paul, removed a few more fragments, and the patient was entirely relieved until December 17th, following, when he was struck upon the head by a falling telephone pole. He had convulsions on the same day, and daily thereafter until April 8, 1886. From that date the intervals between convulsions grew longer and longer, sometimes two and three months elapsing, the convulsions occurring when the patient had been drinking.

About a year before the patient came to me, he was taken into the Tacoma Fire Department, where he remained until he had a violent convulsion, following a spree. He was immediately dismissed from the department, began to drink freely, and had convulsions daily. When he came to me, he said: "I had twenty-eight fits yesterday, and have had from two to ten almost daily for four months."

On examination I found a rectangular depression, as indicated in the accompanying diagram, and I decided to trephine.

The individual was without money, but the chief and boys of the Fire Department contributed the hospital expenses, and he was admitted to the Fannie Paddock Hospital, of Tacoma, Wash., late in April, 1891. On the 20th of May, assisted by Drs. Hickman and Philpot, the head having been shaved, antiseptically cleaned, and the patient etherized, I did the trephining. I made a U-shaped incision, the lines of the incision starting on either side of and well in front of the anterior border or angle of the depression, as indicated at *A B* in the illustration, and extending well backward and to the left beyond the posterior margin of the depression, the loop of the U extending down to the middle of a line from the left ear to the occiput. The flap was dissected up—integument and periosteum separately—from behind forward, and both layers of flap turned down over the bridge of the nose. The periosteum was firmly adherent to the dura mater in a small area in the center of the depression, where bone was missing; much difficulty was



A, B. Anterior points of the U-shaped incision. The dotted oval indicates the area of bone removed.

experienced in the separation. When this was accomplished, the finger could detect a well-marked marginal depression of the inner table of the skull, and a fibrous thickening of the dura. The opening through the skull was too small to permit the use of a rongeur forceps, and we bored through on one side with a trephine, then with the rongeur forceps cut away the entire depressed margin of the skull. The bone was unusually hard, so that it was necessary for the gentlemen present to take turns at the trephine and forceps. After we had removed all the bone over a space as large as a silver dollar, no further depressed points could be felt. Small patches of thickened dura were snipped off, and catgut passed around the bleeding vessels and tied. Bleeding from the bone was slight, and controlled by plugging or by caulking with catgut. The oozing was checked by means of hot sponges (too hot, I believe, and responsible for the subsequent suppuration), firmly held for a few minutes upon the exposed surface; the flaps were stitched back separately with catgut, the wound was dressed antiseptically, and a roller cap-bandage applied. The patient rallied well, but was hard to control; he would get out of bed hourly after the second day, when not closely watched. He said "he felt as well as ever, and had missed his fits."

On about the fifth day, a little discoloration of the dressing over the left ear caused me to remove the cap. The wound was found suppurating freely. I syringed it thoroughly and changed the dressing daily for ten days thereafter, when the wound began to improve. As I was coming East, I left the case in the hands of Dr. Hickman, who attended it for two weeks, when the wound was healed and the patient dismissed. There has never been any pain or recurrence of convulsions

since. A letter from Dr. Hickman, dated Tacoma, November 12, 1891, seven months after the operation, reads: "Our patient has never had another convulsion, and I consider that he is radically cured."

A letter from the patient, dated December, 1891, says: "I never have had a pain or a fit since the operation, and I am working every day."

Although this case adds valuable testimony to our knowledge of the surgery of the brain, and the happy results of trephining depressed areas, there is another interesting feature that merits consideration, viz.: the effect of stimulants upon persons subject to convulsions. Here was an individual, predisposed to fits because of an injury, who, when abstemious, was free from convulsions from 1886 to 1891—nearly five years; and who, under the excitement of intoxicants and consequent increased blood-pressure, relapsed into a miserable epileptic within a fortnight.

A CASE OF ABSCESS OF THE TEMPORO-SPHENOIDAL LOBE, AND OF THE MIDDLE LOBE OF THE CEREBELLUM.

BY FRANK P. NORBURY, M.D.,
ASSISTANT PHYSICIAN, ILLINOIS CENTRAL HOSPITAL FOR THE INSANE, JACKSONVILLE, ILL.; FORMERLY ASSISTANT PHYSICIAN, PENNSYLVANIA INSTITUTION FOR FEEBLE-MINDED CHILDREN, ELWYN, PA.

F. M., a married farmer, thirty-two years old, was admitted to the Illinois Central Hospital for the Insane four weeks after the development of insanity, a cause for which could not be determined. But little of the previous history could be learned. Several weeks previously to admission to the hospital, the patient complained of severe headache, and he became dull and stupid. A short time afterward "he had seven fits." On admission, no symptoms of organic brain-disease were observed. Three days later, however, it was noted that the gait was cerebellar; vertigo was complained of; ptosis appeared, and some aphasia was evident. The condition continued for several weeks, when early one morning the man had a severe convulsion, followed by vomiting. Seven hours later he had another attack of vomiting, followed by apoplectic symptoms. He became unconscious, with face turgid; frothy mucus was discharged from the mouth; respiration was slow and labored; the pulse was bounding; the temperature was 100.2°; there was conjugate deviation of the eyes downward and to the right; the pupils were insensible to light; there was left hemiplegia, with some hemianesthesia; there were no muscular contractions; the bowels moved involuntarily. On the following, day the paralytic symptoms were more extensive, the muscles of deglutition being involved. Coma was profound; the temperature was 101.2°; the pulse 89; the respiration 40. There was some pulmonary edema. A day later, the pulmonary edema was more pronounced; the pulse was 94; the temperature 100.4°; the respiration 42. Ptosis of the right side was now observed. The next day brought little change. The pulse was 98; the temperature 99.2°; the respiration 36. On the following day the pulse was 120; the temperature 101.2°; the respiration 56. The patient went into a state of collapse, from which he failed to emerge.

A post-mortem examination was made thirteen hours after death. The dura mater was found adherent in the occipital region, just above the internal occipital protuberance, in an area an inch and three-quarters by half an inch. The meninges were engorged on the right side. The pia was adherent to the cerebrum beneath the area referred to. On cutting through the falx cerebri, cheesy material was found attached to it. On removing the brain, shreds of broken-down brain-substance and pus were noticed at the base. On section of the brain, an unencapsulated abscess was found in the right temporo-sphenoidal lobe, extending to and opening into the lateral ventricle. The centrum ovale was uninvolved. The mass of disorganized brain-substance was not purulent. A deposit of pus was found at the base, in the region of the motor oculi nerve. Further section revealed the existence of an abscess in the middle lobe of the cerebellum.

The presence of a lesion of the cerebellum had been diagnosticated from the pressure-symptoms, the vomiting, the titubation, and the ptosis, but tumor was suspected, and not abscess. The terminal symptoms of the abscess of the temporo-sphenoidal lobe simulated those of cerebral hemorrhage. The perforation into the lateral ventricle, however, affords the explanation. Pressure in the region of the internal capsule will account for the temperature-range, and the involvement of the fourth ventricle for the varied motor symptoms. The temperature-range may also be explained by the inflammatory process in the ventricles. The probable cause of the multiple abscesses was a traumatism in the occipital region at a point externally corresponding with the localized adhesion of the dura internally. There were no evidences of ear-disease, necrosis of bone, or previous suppurative process elsewhere.

The case reported is interesting, first, because of the obscure symptoms attending the abscess in the temporo-sphenoidal lobe and the existence of marked signs of cerebellar pressure; and, second, because of the infrequency of multiple abscesses from traumatism in the regions occupied.

The latent abscess terminated precipitately, hence the apoplectic character of the symptoms.

A CASE OF COMPLETE OUTWARD DISLOCATION OF THE RADIUS AND ULNA AT THE ELBOW; REDUCED AFTER DIVISION OF THE TENDON OF THE TRICEPS.

BY JOHN HOMANS, M.D.,
VISITING SURGEON TO THE MASSACHUSETTS GENERAL HOSPITAL.

IN THE MEDICAL NEWS for July 11, 1891, Dr. Isham, of Cincinnati, has reported a case of outward dislocation of the radius and ulna, and he states that the whole number of cases reported in the United States is fifteen. I wish to add another, the first and only case I ever saw. The case was a chronic one of three weeks' standing. The elbow was sore, inflamed, and swollen. On this account the dislocation was more difficult to reduce, and the resulting disability has been greater than it would have been in a similar case received immediately after the accident. Oren G., fifty-seven years old, a farmer entered the Massachusetts General Hospital, June 3, 1891, stating that three weeks previously he had fallen

from a tree, striking his right elbow. He felt something crack in the joint, and immediately sent for a physician, who etherized him and put the arm in splints. When the splints were removed, the arm, forearm, and elbow were found ecchymosed, swollen, and tender. The arm was useless, and any movement of it caused intense pain. A consultation was held, and it was decided to send the patient to the Massachusetts General Hospital. On examination, I found the condition of the arm described; very little flexion, pronation, or supination could be performed. The forearm was carried at an oblique angle with the arm. The inner condyle stood out under the skin in plain outline, and the integument looked as if it would burst, while the head of the radius, with the olecranon and coronoid process of the ulna, all uninjured, lay to the outer side of the external condyle. After etherization, the adhesions were broken up by passive motion, and prolonged attempts at reduction were made patiently and carefully, but with much force and without result. Dr. C. B. Porter, the senior surgeon of the hospital, suggested division of the tendon of the triceps. After this was done, reduction was easily accomplished. An internal angular splint was applied and a drip of cold water was kept upon the limb, on account of the heat, swelling, and tenderness. The forearm was gently flexed and rotated on June 15th.

On June 25th the man could flex and rotate his forearm, but the joint was somewhat stiff and sore. As he appeared to be an intelligent American farmer, and would probably follow my advice in regard to using his arm, I thought he would get along better in his own home than in the hospital, and on June 23d he was discharged.

I have not seen him since, but have heard from him several times. Perhaps his own words and expressions will describe the present condition and usefulness of his arm better than I can do. It is not to be expected that a man, fifty-seven years old, with more or less rheumatic stiffness of his joints, who has had a displacement of the elbow unreduced for three weeks, will recover perfect motion and usefulness of his arm. It is interesting and important to know what his present condition is—nine months after the injury. I append a letter just received from him:

FEBRUARY 23, 1892.

DEAR SIR: Your letter of inquiry has been duly received. It is difficult for me to write just how much I can use my arm. There are many little things I can do, and some which I would like to, I cannot do. I can raise my arm to the top of my head, but not as easily or as quickly as one with a perfect elbow. I feed myself some and cut meat with the right hand, but it seems rather awkward, and I want plenty of room in which to do it. The fingers are stiff, but they were so before the accident, and the whole arm is so weak that I cannot grasp or hold much of any weight. The hand is very sensitive to cold. There is stiffness in the elbow, so that I cannot quite straighten the arm. But withal I find it very helpful every day—more so than I can express; and judging from the past I think it will continue to improve.

Yours truly,
OREN G.

A CASE OF TONSILLITIS; TRACHEOTOMY.

BY C. M. McGUIRE, M.D.,
OF SEYMOUR, IOWA.

ON the morning of April 7, 1892, Dr. Eva M. McGuire was called to see a rather poorly-nourished, breast-fed female infant, of healthy parentage, eight months old. The infant was restless, with an axillary temperature of 100° F.; the pulse was 120, the respiration 30. No abnormality was detected in the lungs or in the fauces. The right parotid gland was swollen, and somewhat tender. A mercurial, to move bowels, and phenacetin, gr. ij, every three hours, alternating with potassium bromide, gr. iv, were prescribed, and it was directed that hot fomentations be applied to the parotid gland.

On the morning of April 9th, Dr. McGuire was again called to see the infant. The parents feared that pneumonia had set in. Careful examination failed to discover any abnormality of the lungs. Temperature, pulse, and respiration were about the same as at the first visit. The right parotid gland was more swollen, and the left seemed enlarged. The right tonsil also was slightly swollen and red. No white patch, no membrane was apparent, and there was no hoarseness. The jaws seemed stiff when an attempt was made to open the mouth. The infant had continued to nurse, but would hardly take the medicine. Tincture of aconite was added to the potassium bromide solution; whiskey and cream were ordered to be given every four hours, and hot fomentations to be applied to the parotid glands. The child was playful on April 10th. It took food and medicine until the evening of April 11th, when it would not nurse or take its medicine. The right parotid gland was now greatly swollen and hard; the left not so much so; the mouth was opened with much difficulty. On examination of the fauces both tonsils were found greatly swollen and red, more especially the right. The infant cried continually from 9 P.M. until 4 A.M., except for an interval of about an hour and a half, during which it slept under the influence of opium.

Tincture of opium was given in full doses per rectum, and phenacetin by the mouth. The tonsils were freely and frequently swabbed with hydrogen dioxide. The infant's breathing was difficult, owing to the swollen tonsils. I was sent for at 3 A.M., and advised tracheotomy as the only chance for the infant's life. Dr. Earnest, of Seymour, was also sent for, but before he arrived the parents urged the operation, which was performed by Dr. Eva McGuire and myself, with the aid of the light from a poor oil-lamp. Not having a silver canula, we used a new sterilized, No. 14, American, soft-rubber catheter, held in position by a safety-pin. The infant was anesthetized by means of chloroform. The tube was inserted just below the first cricoid cartilage. The hemorrhage was slight. Sublimate cotton, frequently moistened, was kept around the tube, and moist sublimate gauze kept over its orifice. The atmosphere of the room was kept moist by boiling water on a stove constantly. The infant breathed easily through the tube for awhile; then artificial respiration had to be employed for two or three hours. The child seemed to be doing well, but in twelve hours from the time the tube was introduced the action of the heart ceased. The infant had taken its medicine and food quite well. No fluctuation could be detected in the parotid gland or

tonsil, and there was no rise of temperature until a few minutes before death. There were no rigors or chills, denoting the presence of pus; no hoarseness at any time, denoting edema of the larynx. I report this case because I have been able to find no other in which inflammation of the tonsils appeared secondarily to inflammation of the parotid glands.

PILOCARPINE NITRATE IN FACIAL ERYSIPELAS.

BY G. V. HALE, M.D. (JEFFERSON),
OF WHEATLAND, TEXAS.

PERHAPS none of the common diseases with which the general practitioner is daily compelled to grapple causes him more perplexity and embarrassment, as it continues to advance in spite of scientific therapeusis, than that well-named ancient and modern "Fire Erysipelas." The affection is especially indigenous to this locality and State, and from quite an extensive acquaintance with it in patients of all ages, I feel it a duty to record the satisfactory results obtained from the use of pilocarpine nitrate administered hypodermatically in aqueous solution, in doses of from one-fortieth of a grain for infants to half a grain for adults—the dose at all events being sufficient to maintain a steady appreciable diaphoresis; stimulants being given at the same time, as required. In submitting my experience with this remedy I am neither unduly enthusiastic nor am I unmindful that in the treatment of erysipelas the great master Trousseau "used no remedies except a laxative, but he pushed the administration of food—which must be done, of course, in all cases—and of the great number of cases treated by him only three died."

Two cases of facial erysipelas in infants—one male, one female—respectively seven and nine months old, with temperature (rectal), when first seen in consultation, of 104° and 105°, cerebro-spinal symptoms, after intelligent treatment by all the usual means, yielded to pilocarpine nitrate in slightly diaphoretic doses, being markedly improved in from twenty to thirty hours and convalescent in a week. The only laxative used was castor oil. In these cases, contrary to my usual experience, we were unable to check the spread of the dermal inflammation. It gradually invaded every inch of skin, even to finger and toe tip; but the advancing line was only of a pale reddish hue. The temperature declined to 100° after the third dose; the infants rested well and nursed again (the breast had been refused and breast milk was administered with a spoon for about thirty hours).

The results of these cases, so unpromising and malignant at first, are entirely consonant with my experience with the remedy in many other cases and the course of the disease in these instances varies only in the failure to promptly arrest the advancing line of inflammation. I began using jaborandi and pilocarpine after listening to the remarks of my honored instructor, Professor Da Costa, concerning jaborandi in erysipelas, at a clinic at the Pennsylvania Hospital several years ago, and have not failed to relieve a single case in which the remedy was employed early enough to have had anything like a fair trial.

MEDICAL PROGRESS.

The Relations of Various Bacterial Poisons to Immunity and Cure.—G. KLEMPERER (*Zeitschr. f. klin. Medicin*, 1892, xx, 1, 2, p. 165) defines toxalbumins as albuminous bodies that result from the growth of bacteria in bouillon. Solutions of toxalbumins injected into animals in small, gradually increasing quantities protect from infection by the respective bacteria. The specific activity of toxalbumins is related to definite temperatures. Proteins, on the other hand, are albuminous substances that are contained within the bacterial organism. They are obtained by boiling pure cultures of bacteria in the nutrient bouillon or in washings in water. The characteristic of proteins is that they are not decomposed by protracted boiling. Tuberculin is the protein of tubercle-bacilli and the only protein that has hitherto been employed to confer immunity and to accomplish a cure. Klemperer has prepared proteins from the pneumonia-coccus, the bacillus pyocyaneus, the micrococcus prodigiosus, the bacterium coli, and the bacillus anthracis. Injected into animals each gave rise to a characteristic reaction, *protein fever*, analogous to that following the employment of tuberculin. Some could be used interchangeably with tuberculin, reaction and tolerance remaining otherwise unaffected—tuberculous animals reacting to either protein and the tolerance established to the one holding good for the other. With none of the proteins employed was immunity conferred or cure accomplished. Klemperer employs the term toxin instead of toxalbumin. He has especially studied the toxin of the pneumonia-coccus. Immunity to pneumonia has been conferred upon animals by treatment with pneumotoxin. Natural recovery from pneumonia depends upon the conversion of pneumotoxin as a result of the pyrexia into antitoxin. Artificial recovery may be brought about by the injection of the serum of an animal in which the toxin has already been converted into the antitoxin. The process of conversion, however, requires several days, and infected animals often die; but the process can be accelerated by heating the toxin prior to injection. The results warrant the conclusion that immunity can be conferred after infection has taken place, by the injection of sufficient quantities of suitably prepared toxin.

Sudden Death from Latent Tuberculous Leptomeningitis.—HERYNG (*Internationale klin. Rundschau*, 1892, No. 14, p. 545) records the case of a boy, ten years old, in which the galvano-cautery was employed in the treatment of a hypertrophic rhinitis. On the morning following an application the boy was found dead. The autopsy disclosed the existence of a tuberculous leptomeningitis, particularly involving the base. In the left occipital fossa, attached to the membranes and lying upon the cerebellum, were two tumors, one as large as a hazelnut, the other as large as an English walnut. On section the growths were found to be caseous at the center; the periphery was infiltrated with round cells; the stroma contained giant cells, with tubercle-bacilli. The upper portion of the left lung was adherent to the costal pleura. On both layers of the pleura miliary nodules were visible. The apex of the lung contained a small number of grayish-white points. The bronchial glands

of the left side were enlarged and caseous; so were the mesenteric glands. The serous layer of the lower portion of the small intestine presented a number of areas occupied by miliary nodules. The mucous membrane of the corresponding portion of the small intestine and of the adjacent portion of the large intestine was covered with grayish-white nodules. It was learned that the boy had had a severe attack of measles a year previously, complicated by exudative pleurisy upon the right. Shortly afterward, after an indiscretion in diet, he had had an attack of convulsions.

Infection-proof and Intoxication-proof.—BRIEGER, KITASATO and WASSERMAN (*Zeitschr. f. Hygiene*, 1892, Bd. xii, p. 91) have made an experimental study of bacterial intoxication. Pathogenic microörganisms may cause symptoms either by their multiplication and general dissemination, or by the absorption of toxic substances produced at the seat of local infection. Some animals naturally resist general infection; others resist intoxication. By certain methods of treatment the protection natural to some animals can be artificially extended to others. An animal may, however, be intoxication-proof, but not immune or infection-proof, and *vice versa*. By the treatment of cultures of the bacilli of tetanus, cholera, diphtheria, typhoid fever, and erysipelas, with an extract of the thymus gland, the virulence of the organisms was diminished, while immunity was conferred; the serum of immune animals had the power of protecting other animals. The results with the bacilli of hog-erysipelas and anthrax were not so conclusive. The conclusion is reached that the protective substances are not contained in the products of tissue-metamorphosis but within the bacterial organism. The characteristics of these substances are as follows: they contain a relatively large proportion of phosphorus; in contrast with toxalbumins, they pass with difficulty, if at all, through porcelain filters; they are destroyed by temperatures of 212° F.—*Deutsche medicin. Wochenschr.*, 1892, No. 14, p. 317.

Thoracocentesis.—At a meeting of the French Academy of Medicine, DIEULAFOY (*L'Abeille Medicale*, 1892, No. 18, p. 137) advocated the employment of thoracocentesis whenever the volume of fluid in the pleura furnished the indication. An effusion of 1800 c.cm. (three pints and a half, plus) marks the limit. Dyspnea as an indication cannot be relied upon, for death may result from the volume of the effusion in the entire absence of dyspnea. Dieulafoy denied that thoracocentesis, properly performed, led to the conversion of a simple into a purulent effusion. He related that he had performed thoracocentesis almost four hundred times, without empyema developing in a single instance.

The Differentiation of Typhoid-bacilli and the Bacilli Coli Communis.—THEOBALD SMITH (*Centralbl. f. Bakteriol. u. Parasitenk.*, 1892, xi, 12, p. 367) refers to the observation made by him in 1889 that typhoid-bacilli on the one hand, and colon bacilli and other organisms found in the intestinal contents of man and animals on the other hand, are to be distinguished from one another by the fact that the latter in culture cause decomposition of glucose with the evolution of gas, while the former do not.

THERAPEUTIC NOTES.

Lactic Acid for Tuberculous Fistulæ.—ZIPPEL (*Centralblatt für Chirurgie*) recommends the topical employment of lactic acid in the treatment of tuberculous fistulæ. Protracted application is necessary, and this is secured by means of suitably prepared bougies. To this end, equal parts of gelatin, lactic acid, and water are thoroughly mixed and gently warmed, while 20 per cent. of menthol is added; the mass is poured into moulds, which are for twenty-four hours placed in an ice-chest. The rods are then placed in an exsiccator over calcium chloride. At the expiration of eight or ten days they are covered with collodion. Before being used they are cut cone-shape at one extremity, and are then ready for introduction. If the sheath of collodion is objectionable, the rods may be kept in oil or in benzine to which 30 per cent. of menthol has been added. Menthol is added to diminish pain. If starch with tragacanth be substituted for the gelatin, the rods are harder and less elastic.—*Wiener medizin. Presse*, 1892, No. 15, p. 596.

Goiter Successfully Treated by Injections and Enucleation.—O'REILLY (*Lancet*, No. 3579, p. 741) has recorded the case of a woman, forty-two years old, who presented an immense cystic goiter of thirty-six years' standing. By means of a "double-barrelled" syringe of special device some of the contents of the mass were withdrawn, and solutions of mercuric chloride, resublimated iodine, and potassium permanganate alternately injected. After two months' treatment, in the course of which some seventy injections were made, the tumor was reduced to one-third of its original size, and the symptoms previously present relieved. A radical operation was now decided upon, and the entire right lobe of the gland, weighing more than two pounds, was removed. The patient made an excellent recovery, the left lobe undergoing spontaneous reduction in size.

Black Snakeroot for Dysmenorrhea and Ovarian Irritation.—From the results obtained in a series of cases JAMES BRUNTON (*Practitioner*, xlviii, 4, p. 265) concludes that *actea racemosa* (black snakeroot) possesses anodyne properties and may, with advantage, take the place of bromides and opiates for the pain of dysmenorrhea. In addition, the drug has a direct action on the uterus, increasing the menstrual flow when scanty. It is best administered in doses of thirty minims, thrice daily, beginning three days before and continuing throughout the period. It is sometimes useful in menorrhagia and metrorrhagia. Its action is almost specific when there are ovarian pain and nervous depression.

For Tapeworm.—

℞.—Strontii lactat. . . . . ℈iv.
Aquæ destillat. . . . . f℥j.
Glycerini . . . . . q. s.—M

Sig.—Two teaspoonfuls daily in the morning for five days.—LABORDE, *Journ. de Med. de Paris*, No. 15.

Atropine for Gastric Hypersecretion.—In a case in which the gastric juice was secreted in excess, and other measures had failed, VOINOVITCH obtained curative results by the administration of one one-hundredth of a grain of atropine three times daily.—*La Sem. Mèd.*, No. 17.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, MAY 14, 1892.

THE AMPLIFICATION OF THE QUARANTINE SERVICE.

QUARANTINE, thoroughly organized upon a scientific basis and judiciously and skilfully conducted, not only protects the public health but facilitates commercial intercourse. It seeks first of all, by its far-reaching influence and coöperative organization, the prevention of disease as the surest way of preserving the public health and uninterrupted commercial communication. Failing in this, it aims, in the second place, at the prompt suppression of disease with least embarrassment to commerce. In order to accomplish the first object, it is manifest that a system must be adopted that extends its surveillance to foreign ports. To some extent, this is now done by consular agents and special officers acting under the sanction and direction of the national authority, and with the acquiescence of foreign governments. But ideal results can only be obtained by a well-organized system operated under international coöperation and made to apply to ports of departure as well as to ports of entry, and extending its supervision over vessels on the high seas. So comprehensive a scheme necessarily involves the assumption by the government of the control of quarantine.

Quarantine is the necessary interposition of sanitary surveillance for the purpose of detecting and excluding dangerous communicable diseases. It is not necessarily burdensome, but must, at whatever cost, effectively guard the public health; otherwise it is an expensive formality, obstructive of commerce without yielding any compensative advantages. If wisely and efficiently carried out and supported by intelligent and full coöperation of other countries, under proper international agreements, it is not only preventive of the introduction of disease, but a positive advantage to commerce by avoiding those calamities that, in the absence of regulations or from their lax administration, occasionally must happen and disrupt for the time commercial intercourse and seriously embarrass trade.

The fundamental principle of correct quarantine administration is the prevention of disease. The neglect of measures of prevention abroad necessitates the provision of regulations at home to meet all possible consequences. By reason of limited jurisdiction and scope of authority, quarantine has hitherto concerned itself almost exclusively in the restriction and suppression of disease. The imposition of disabilities has its salutary effect. It is more through fear of the consequences than by the exactions of law that measures of precaution are observed. So long as authority is hemmed in by local bounds, just so long will progress in the development of the highest function of quarantine service be obstructed.

The prevention of diseases involves a knowledge of their nature, origin, and causes, and the continuous and assiduous application of measures based upon such knowledge. It is not the want of knowledge, but the neglect to profit by it, that brings disaster upon the commerce of the world. The great fault in existing systems is the lack of concern with regard to the condition of departing vessels. Bills of health are optional, and not mandatory as they should be. The opportunity to evade wholesome restraint is seldom barred. Hence the assumption of risks by ignoring prudent measures of protection, which provokes calamities that are often visited upon the unoffending. Flagrant defiance of humane precautions would not be possible under the censorship of the national authorities.

In order to secure equal advantages, the responsibility of quarantine administration should be shared by countries bound together by trade-relations. Private interests, those of the shipowners,

and public interests, those of the community and State, being allied in seeking the advantages of strict sanitary administration, it is incumbent on governments, in view of their national interests, to exercise the authority, under international agreements, of regulating the sanitary management of the merchant marine in port and on the high seas, and all that pertains to quarantine. Mutual protection of health and commerce can only be assured by reciprocal agreement and concert of action. Coöperation is to be effected on a basis of mutual advantage by international agreement on a code of sanitary and quarantine rules and regulations founded on established general principles universally applicable, and adapted to the peculiarities of the service. These regulations should be applicable to commercial ports and to vessels upon the high seas. There should be a guarantee of reliable administration of the health-laws of every port, and a trustworthy certification of the exact state of health. There should also be required a reliable certification of the health of the crew and passengers and of the good sanitary condition of the vessel and cargo, before leaving port. Vessels of the larger size, especially those carrying emigrants, should be under the skilled and rigid sanitary supervision of officers permanently attached thereto, and the smaller craft under the supervision of deputized officers, who shall act under an approved code of regulations. Accurate daily records of the health of the vessel while at sea should be kept, and an attested copy be prepared for the advice of officials at the port of entry. The enforcement of these measures will, by preventing and restricting disease, aid in lessening the burdens of quarantine, and inure to the advantage of the health and commerce of the nations.

Under vigilant supervision it is hardly possible for vessels to become infected, but nevertheless cases of infectious disease will occur on shipboard, which will subject the vessel to treatment at the quarantine station. Under modern practice, detention is not required for a longer time than is necessary to form a certain judgment of the health of the vessel, and in certain cases for discharging the cargo, removing the passengers, etc., and disinfecting the vessel and its contents. It may be necessary to remove the passengers and crew for the purpose of observation, and hence every station should be provided with accommodations for the greatest possible demand for properly caring for passengers during observation. This is one of the greatest defects in local quarantines at the present day, but under national control this difficulty can be easily avoided. The facilities for the varied application of perfect disinfection must exist, otherwise quarantine is robbed of its main dependence.

The advantages of establishing quarantine under government control, broadened by international compacts, are: uniformity of system; general application, even to vessels on the high seas; efficiency of personnel, from life-duty and experience; concentration of apparatus and force at any port in emergencies; full sanitary reports of the ports of the world and advance knowledge of the condition and movements of vessels; avoidance of local prejudice and discrimination; economy of administration; uniform system of quarantine charges and fees; freedom in selecting the most eligible sites for quarantine stations irrespective of State jurisdictions; facilities for collecting valuable data; and the systematic and progressive study of contagious and pestilential diseases, and the establishment of confidence in the reliability of the service and the consequent avoidance of needless panic.

As a preliminary to negotiations for an international system it is absolutely necessary to establish a national service that shall have exclusive control of the quarantines of the country. Under such a system the present quarantine practices could be simplified, harmonized, and systematized as preparatory to entering into treaties with other nations for reciprocal advantages.

The attention of the coming meeting of the Pan-American Medical Congress should be directed toward the ends spoken of in the foregoing remarks. An excellent opportunity will be presented for establishing uniformity, encouraging coöperation, and formulating the desired regulations of an ideal international quarantine service.

SCLEROSIS OF THE NERVOUS SYSTEM.

THE pathology of the scleroses of the nervous system is not perfectly understood. The lesions are, as a rule, readily recognizable post-mortem, and during life the symptoms are generally fairly distinctive. It is, however, not a settled question whether what is called sclerosis is always the result of a single process, or is the terminal stage of many different primary conditions. We are not in a position always to indicate the primary process; and, again, it is difficult to make a distinction between

inflammation and degeneration. While the distinction is, perhaps, a refined one, the view has been expressed that the systemic scleroses—posterior, antero-lateral, descending and ascending—are dependent upon degeneration of axis-cylinders, followed by a conservative substitution of connective tissue; while cerebro-spinal, disseminated, or multiple sclerosis is considered as a hyperplasia of the connective tissue of tracts of various distribution, followed by secondary degeneration of the nerve-fibers. Whatever the sequence, the ultimate result is much the same. It can be safely accepted that in both instances we have to do with a chronic inflammatory process.

There is abundant reason to believe that there is the closest relationship between the various forms of nervous degeneration known as sclerosis, although the explanation why certain systems are so often alone affected is beyond our knowledge. On the other hand, it must be conceded that there are many cases in which the symptoms do not correspond to those of a simple systemic affection, limited to a single tract of fibers, but are those of lesions of irregular distribution, and post-mortem investigation has frequently verified the conclusions of clinical study. As accepted types of such mixed forms we have multiple sclerosis, ataxic paraplegia, and Friedreich's ataxia, or hereditary ataxic paraplegia. In the last two the lesion is practically the same—a sclerosis of the posterior and lateral columns—and the clinical differences are too slight that much stress should be laid upon them. The matter of hereditary transmission is not always easy of determination, and at best is only indicative of the transmission of a tendency to altered nutrition, a heightened susceptibility to abnormal processes. In a given case, it may be impossible to intelligently separate the one from the other. This brings us, too, to the close clinical resemblance between multiple sclerosis and paralysis agitans. There are apparently border-line cases that can be placed in either category, and a few cases have been recorded in which, during life, the symptoms of the one condition predominated, while the lesions of the other were found post-mortem. It is on account of these close resemblances, and the intimate interweaving of the two affections, that we feel justified in considering paralysis agitans as a form of diffuse cerebro-spinal sclerosis.

Recently, attention has been called to a group of cases in which the symptoms conform to none of the previously recognized types, and in which lesions of irregular distribution have been found. To these cases the designation combined sclerosis has been applied. It is not rare to have added to the symptoms of a systemic sclerosis manifestations of involvement of another system of fibers. It is also a perfectly well known fact that inflammation of the peripheral nerves is often associated with posterior spinal sclerosis, while the association of posterior sclerosis and general paralysis of the insane is a matter of clinical record.

RAYMOND (*La Médecine Moderne*, 1892, No. 15, p. 276) has reported a case of combined sclerosis, in which symptoms of involvement of the posterior columns predominated. Subsequently, symptoms of paretic dementia were added, and a fatal termination was not long deferred. When an autopsy was held, a diffuse sclerosis of the cord was found, with especial involvement of the posterior and lateral columns, and interstitial inflammation of the cerebral convolutions.

THE GRADUATION FEE.

DOUBTLESS the wrestlings of our medical colleges with financial problems are already sufficiently severe without criticism of any of the established sources or methods of income. But doubtless, also, the graduation fee is indefensible on grounds of justice. After a student has paid his tuition fees for three or four years, fulfilled his duties, passed his examinations, and in every way complied with the regulations and legitimate demands of his *alma mater*, the likelihood of his thinking the *mater* decidedly *dura* will be increased by her demand for $30 or $40 before she will certify to the fact of his completed course of study. It may be said that the "sheepskin" itself and printing (or its illumination in the highest style of Spencerian art), costs a certain sum, and that the rental of the public hall in which the exercises are held, together with sundry other expenses—the Faculty banquet, for example—altogether make up a considerable item of expense for the institution, or, as the case may be, for the members of the Faculty.

In answer it may be protested that the parchment, with whatsoever chirographic skill illustrated, costs but a dollar or two; that often the public hall is charged to the graduates—as indeed it should be, but not if in addition to the graduation fee; and lastly,

that if the Faculty banquet is a matter of money it is not one of generous good-will and good-bye.

There is a certain amount of hugger-mugger about all this custom. What legitimate excuse can be offered for it? The great majority of medical students finds this unjustifiable demand hard enough to meet; but it is the custom; the students secretly feel its injustice, and they pay the fee and go away feeling less kindly to the college than they should.

Would it not be better to put the tuition fees properly high, let every charge rest upon a real excuse and reason, charge for diplomas and the public hall at cost, and not as at present from 100 or 200 hard-pressed and unwilling men extract $2000 or $6000 for reasons that will not bear frank discussion?

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting, April 27, 1892.

Vice-President CHARLES H. THOMAS in the chair.

DR. SOLOMON SOLIS-COHEN read a paper entitled, "Shall Physicians become Sales-agents for Patent Medicines?"

Section 4 of Article I of the By-laws of the Philadelphia County Medical Society reads as follows:

"Any physician who shall procure a patent for any instrument of surgery, or who sells or deals in patented remedies or nostrums, or who shall give a certificate in favor of a patented or proprietary remedy or patented instrument, or who shall enter into an agreement with an apothecary to receive pecuniary compensation or patronage for sending his prescriptions to that apothecary, shall be disqualified from becoming or remaining a member."

Article VIII of the By-laws of the Philadelphia County Medical Society accepts as an integral portion of those by-laws the Code of Ethics of the American Medical Association.

A section of that code of ethics treats "Of the Duties of Physicians to Each Other and to the Profession at Large." Article 1 of that section sets forth "Duties for the Support of Professional Character." Section 3 thereof condemns open or underhand advertising as "derogatory to the dignity of the profession." "These," it says, "are the ordinary practices of empirics, and are highly reprehensible in a regular physician." Section 4 continues:

"Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine, or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality, and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them."

To the clearness and force of this dictum nothing can be added. Its wisdom and its justice are beyond dispute.

It is unfortunately true that much of our therapeutics is as yet empirical. Nevertheless the best endeavors of the true physician are directed toward establishing a rational basis for that which experience has proved to be beneficial; toward obtaining scientific data by which to make progress to a therapeutics not empirical; and toward eliminating from the traditional heritage of the profession such measures as may have had their origin in superstition or mistaken observation. To use preparations of unknown composition; to use mixtures of innumerable substances, some directly opposed to each other; to use even rational and known combinations of which the ingredients and proportions have not been adjusted to the indications and conditions of the individual case—are certainly not scientific methods or practices likely to advance rational therapeutics.

That much of the flavor of the mystery and witchcraft that at one time appertained to the practice of the healing art should have survived among the vulgar is only a phenomenon to have been expected in the natural course of social evolution. Hence it is that homeopathy and mind-cure and patent medicines have so powerful and so profitable a hold upon the purses of the community, and this not alone among the ignorant and the unlettered. It is a notorious fact that members of the clergy—presumably educated and intelligent men—are among the most prominent and persistent givers of testimonials to the virtues of advertised nostrums, and medical men and medical journals have long made the religious press a target for satire and invective, because of the hold that the advertising quack has secured upon its columns.

In an address to the Medical Society of the State of Pennsylvania at its last meeting, in calling attention to the alliance between the secular press and the empirics and nostrum-venders, I felt justified in saying that the publishers of magazines and newspapers that allowed themselves to advertise the curative virtues of this or that ready-made preparation or alleged remedial measure, to be applied indiscriminatingly to all cases—whether of one disease or of many diseases—were accessories to a crime against the unfortunate and the helpless; not alone because of the money filched from the pockets of those deluded by the false promises held out to them; not alone because of suffering unrelieved and lives deprived of their chance for prolongation; but in many instances because of the disease and suffering and death directly produced by the poisonous compounds or noxious gases administered to any that chose to purchase. If such criticism was justified—and who is here that will deny its truth?—if such criticism was justified when applied to those who make no pretence of special knowledge or of devotion to a noble art—to those whose object is solely and avowedly commercial—what language remains to characterize the action of medical journals that permit the insertion in their columns of advertisements such as these that I pass around? What severity of reprobation is adequate for

the conduct of the *Journal of the American Medical Association?* What words of condemnation are strong enough for the physician that permits his name to be associated with these devices of the devil?

The frankly unscrupulous patent-medicine vender, the maker of "Safe-cures," or "Temperance Bitters," or "Sure Specifics," is at least to be commended for what, to paraphrase a remark of Senator Benjamin Harrison's, may be termed his "bold brutality." His allegations of philanthropic motives are not intended to be believed; they deceive no one—they are the recognized *ad captandum* devices of the clever advertiser—and, in the sale of his wares, there is no pretence of examination, or of diagnosis, or of prescription based on diagnosis.

Far more iniquitous and far more dangerous to society is the wily manufacturer that advertises "to the profession only." Whether he ostentatiously holds secret the composition of his nostrum, or whether with pretended frankness he describes it with an appellative that means nothing, or publishes a formula that cannot be carried out, his object is the same; he seeks to make the physician's the hand whereby he may reach pockets shut from the coarser methods of the Warners, the Pinkhams, and the Jaynes; for, after all, it is the minority that can be deluded by the flaring posters of "Wizard Oil," or the lying testimonials of "Tonic Vermifuge." When a sick man applies to a physician, thinking that thereby he will secure the benefit of special knowledge brought to bear upon the conditions of the individual case, entrusting to the conscience of his medical adviser his health and his life, he is entitled to the skill and the thought for which he pays, and which he deems himself to be receiving. He certainly deserves better treatment than to be handed over to the mercies of "antikamnia," or "febricide," or "quickine," or "gleditschine," or "Freligh's tablets," or "Listerine," or any other of the unholy crew. If such is to be his fate, let him have the satisfaction of buying the worthless or poisonous stuff directly, without the sham of a professional consultation, and without paying a purchaser's commission to the medical sales-agent.

At the coming meeting of the State Society I purpose offering the following resolutions, for which I ask the support of this Society:

Resolved, That the Medical Society of the State of Pennsylvania hereby expresses its highest disapprobation of the practice of giving certificates or testimonials to secret preparations alleged to be of medicinal virtue, and calls the attention of the affiliated County societies to the fact that such action on the part of members of the said societies is in derogation of the dignity of the profession, and in violation of the letter and the spirit of the Code of Ethics of the American Medical Association and of this Society.

Resolved, That this Society likewise expresses its disapprobation of the practice of inserting advertisements of secret preparations in the columns of medical journals, such action being an insult to the intelligence of the profession, and a degradation of journals indulging therein to the level of the patent-medicine almanac. Especially to be condemned is the action of the *Journal of the American Medical Association* in admitting such advertisements.

Resolved, That copies of these resolutions, duly attested by the permanent Secretary, be sent to all County societies in affiliation with this Society, to the American Medical Association, to State medical societies in affiliation therewith, and to the publishers and editors of American medical journals.

On motion of Dr. J. MADISON TAYLOR, the resolutions were adopted as the sense of the Philadelphia County Medical Society, and the delegates to the Medical Society of Pennsylvania were instructed to officially present and support them.

DR. T. RIDGWAY BARKER read a paper entitled "Does Organic Disease of the Heart Preclude the Use of Chloroform in Parturition?"

In entering upon the discussion of a subject of such paramount importance to mother, offspring, and obstetrician, one cannot lay too much stress at the very outset upon the axiom that "A good remedy will fail of its effect if not properly administered." This fact must be kept uppermost in our minds if we would avoid fatal results, not due, however, to the employment of the agent, as some would make it appear, but to the lack of attention and care exercised in its administration. That there is a radical difference between surgical and obstetric anesthesia (analgesia) goes without saying. If we consider for a moment the stages of anesthesia, which differ only in the profoundness of the impression—first, sopor; second, stupor; and, third, stertor—we cannot fail to observe that in analgesia one rarely has occasion to carry the effect beyond the first degree (sopor), while in surgical anesthesia we are obliged to advance beyond this and keep the patient in the second stage, or that of stupor, thus decidedly increasing the gravity of the prognosis.

In this connection, let us devote a moment's consideration to the progressive effect of chloroform-vapor upon the nerve-centers of the cerebro-spinal system, beginning, as it does, at the inferior extremity of the cord, sacro-lumbar, and gradually extending its paralyzing influence upward until it reaches and expends its force upon the medulla oblongata. These well-established clinical observations having been verified by physiologic experiment, we are justified in putting them to practical application. What other agent, may be pertinently asked, can relieve—aye, abolish—pain so quickly and safely, yet leave reflex muscular contractility unimpaired, as chloroform? Ether and ethyl bromide have found favor with some practitioners, but neither can displace chloroform.

Fordyce Barker states in his writings: "I may say here that I have long regarded chloroform as the best and safest anesthetic in obstetrics, and that since 1850 I have used no other."

The danger from the employment of chloroform in obstetric practice depends more upon the carelessness with which it is administered than to any toxic effect inherent in it. The four cardinal points to be borne in mind in its administration are: First, the admission of plenty of pure atmospheric air; second, the liberation of a small volume of the vapor at a time; third, attention to the respiration; and, fourth, frequent observations as to the force and frequency of cardiac action. That in the recorded cases death has been due in a great measure to saturation of the residual air in the lungs to

a fatal degree can scarcely be doubted. A few deep, forced inspiratory efforts will quickly produce such a condition. Withdrawal of the agent under these circumstances cannot prevent the further entrance of the chloroform-vapor into the circulation, for it already fills the air-cells. Nor will attempts at artificial respiration prove effectual, since but a small quantity of the residual air can be forced out of the lungs, while that which enters fails to sufficiently dilute the vapor owing to the tardiness of diffusion.

Let us not suppose, however, that because we administer to the parturient female small quantities of the drug continuously, no risk is therefore incurred, for experiments directed to solve this important question go to prove that even small doses, when continuously inhaled, tend to produce dangerous, and at times fatal, cardiac exhaustion. Far different is the result when the vapor is given intermittently, as is the unalterable rule in obstetrics. Should we seek authority for the statement that the dangers from the careful administration of chloroform in labor are too insignificant to warrant its refusal, we have only to turn to the *American System of Obstetrics* to find therein the following: "The danger when chloroform is used only to the extent of mitigating or abolishing pain in childbirth is practically *nil*." Lusk, quoting from Bert's experiments, states "that chloroform might be intermittently administered for an indefinite period with safety." These remarks do not apply to its use in the third stage of labor, for, as is well known, after delivery of the child it is likely to occasion relaxation of the uterus, thus favoring post-partum hemorrhage.

Offering the foregoing as a preface to my remarks on the judiciousness of employing chloroform when the parturient female suffers from organic cardiac disease, it now remains for us to consider the effect of parturition upon this enfeebled circulatory organ, thereby securing a scientific basis for our conclusions. In the first stage of labor, we find the muscular contractions confined to the uterine muscular layers and directed toward neutralizing the action of the circular fibers of the cervix, while in the second or propulsive stage not only does the uterus exert its power to the utmost, but also the abdominal and respiratory muscles are brought into action by the will of the parturient in her efforts to expel the fetus. The diaphragm is forced down and its movements paralyzed by the woman holding her breath.

The other respiratory muscles are likewise unable to act, and hence imperfect oxidation of the blood results. As a consequence, the cardiac movements are accelerated, greater resistance is met with in the pulmonary and aortic circulations. Moreover, a tendency exists to venous congestion, as evinced by the hue of the face and the swollen veins.

Owing to the excruciating pain experienced when the head passes through the cervix, the parturient is further tempted to make additional muscular efforts, which only augment the difficulty. Under normal conditions, this strain is of such brevity that it cannot be considered of any importance, but when complicated by disease of the heart is of far greater gravity. If the condition be one of fatty degeneration due to a previous pericarditis or myocarditis, resulting in faulty nutrition and enfeeblement of the heart's action, as evinced by weak impulse, venous stasis, confused and irregular sounds, anemia alike of brain and of other organs, with faintness and oppression on the slightest exertion, this interference with circulation and respiration may readily tax the powers of the heart too far, and so cause speedy death from paralysis. Here the conditions that pertain in surgical anesthesia are absent. The indications present are to allay excessive muscular action and respiratory spasm, which are threatening the over-stimulated heart.

To allow the woman to continue such efforts is to permit her to commit suicide; to warn her to desist when in such agony is useless; while delay is likely to be fatal. How can we overcome this condition of nervous excitement? Can we accomplish it by the administration of chloroform? Yes; of the two evils, for we must acknowledge that there is an element of risk in giving chloroform, we can only choose the lesser, and so promptly proceed by inhalation to relieve the accessory muscles of parturition of their strain. By the abolishment of pain we lessen the work required of the laboring heart, which, instead of beating at the rate of one hundred and forty or more a minute, may diminish in frequency to ninety or one hundred.

What has been said of fatty heart is equally applicable to conditions of hypertrophy and dilatation.

The equilibrium, if disturbed, is almost certain to result disastrously. If relief is not afforded, the sense of fulness in chest and the oppression due to bronchial congestion become most distressing. The cyanosis (from deficient aëration) is greatly exaggerated, while the insufficient blood-supply to the brain causes syncope and may be succeeded by coma, if the excessive reflex disturbance be not removed. Nor are the indications for the administration of chloroform materially different in the case of females in labor with valvular disease. Whether it be mitral in the young adult or aortic in the aged primipara, the cardiac strain must be relieved if we would save our patient. As is well known, all forms of valvular disease ultimately develop a condition of ischemia on one side with corresponding low tension, while on the other side is stasis with high tension. While, by compensation, life may run on for years, yet, when the strain of parturition comes, it will soon be overthrown if precautions are not taken to prevent it.

Of what benefit will be our knowledge of the value of cardiac "physiological rest," as laid down by Fothergill, if we do not apply it under these conditions? We all appreciate the importance of securing "quietude of mind and body" when such pathologic states exist. Then why not employ the quickest and safest means to obtain it by the inhalation of chloroform? If the danger is great from "active exercise—climbing mountains, running up stairs, lifting heavy bodies, and all kinds of exercise involving heart strain"—how much greater, aye, how immeasurably so must it be when the parturient woman forces, with the anguish of despair, every muscle to its utmost in her desire to deliver her child.

From a study of chloroform-anesthesia in obstetric practice, we have seen how the agent should be administered and how it acts. Surely none will contend that in its employment under these circumstances we act otherwise than for the best interest and safety of our patient. That one may not be charged with being a blind adherent to theory, one has only to turn for support and justification

to the teachings of the late lamented Fordyce Barker, who states: "It seems to be almost accepted as an axiom, with both the profession and public, that the inhalation of chloroform is dangerous for any woman with disease of the heart. For more than thirty years I have been convinced that this opinion is quite erroneous, and I have so taught in my lectures and in former writings." He goes on further to say: "I have seen several cases, complicated by dangerous heart-lesions, that terminated favorably, as I think, solely from the use of chloroform."

Snow, likewise, is of this opinion. "In all forms of valvular disease," he says, "chloroform, when carefully administered, causes less disturbance of the heart and circulation than does severe pain." To quote from Championnière: "If," he says, "I recognized an organic affection of the heart, without pulmonary complications, I should rather give the woman chloroform than to let her suffer." Were further proof necessary as to the propriety of employing chloroform-anesthesia, one might include among this group of clinical observers, Vergeley, who expresses himself thus: "Diseases of the heart are not a contra-indication to the use of anesthesia." Macdonald states: "In almost all cases of heart-disease with labor, chloroform has been given, and apparently with benefit, during delivery. If carefully administered, I think it cannot but be useful in all cases." Since such eminent authorities advocate its employment, can we justify ourselves in refusing our patients the benefit and comfort that this agent affords? What is the danger from chloroform compared to the state of exhaustion and collapse into which the parturient woman will inevitably fall? If this heart is forced to the verge of paralysis from overwork and excitement, why shall we not use the means at our command to lessen that strain? Let us have a reason for the faith that is in us, and not hesitate to fearlessly employ extreme measures to overcome extreme dangers.

Chloroform by inhalation can and will, if properly administered, save the lives of parturient women suffering from organic disease, when death seems imminent from over-stimulation of its ganglia through reflex nervous action. Organic heart-disease, then, does not preclude the use of chloroform in labor, but rather is a condition calling for its careful administration.

NEWS ITEMS.

The "Bichloride of Gold" Delusion.—The following preamble and resolution were adopted at a recent meeting of the Hampden (Massachusetts) District Medical Society:

Whereas, according to common and newspaper report, and upon information and belief, it is known that a member of this Society and fellow of the Massachusetts Medical Society in regular standing, has, by associating himself with one of the most notorious impostors of this century, in the application and use of a remedy for the cure of inebriety, called "bichloride of gold," and whose exact composition it is pretended is known only by, and is the sole property of, a certain individual; and

Whereas, no such stable chemical combination is possible, and the substance actually used with so much secrecy and profit to the proprietor is and has been employed in suitable cases for years by regular physicians, who well know its limitations and dangers; and

Whereas, by associating himself with a regular physician this pretender hopes to gain prestige and the quasi-indorsement of the regular profession, thus enabling him longer to delude the public; and

Whereas, the association of a regular physician in such a capacity is calculated to injure the public and is degrading to those who are in fellowship with such a physician, and recognizing that "naught but evil can finally result from trifling with moral or physical facts, and that it is better to cure rightly and really than wrongly and delusively," and that by the "humbuggery of secrecy, delusion, and hypnotic suggestion," a far less number will, in the end, receive benefit; and

Whereas, it is the opinion of the members of this Society that the use of the drugs, in the manner employed, for the cure of inebriety by the aforesaid impostor, produces a cerebral stimulation, with intellectual disorders which are sometimes quite serious, together with other grave nervous troubles, themselves constituting a form of inebriety frequently leading to insanity and suicide, and a lowering of vitality, rendering the patient less able to resist and recover from ordinary diseases; and

Whereas, in those cases of inebriety claimed to have been cured by means of this pretended secret method of treatment, it is our opinion that such cures resulted not *because* of said treatment, but *in spite* of it, and there seems little doubt that hypnotic suggestion played an important part in effecting said cures, and it is our opinion that in all of the so-called "cures" the result attained could have been better secured by improving the moral condition of the patient, by the use of tonics or hydro-therapeutics, regulating nervous action, and by attention to the digestive tract, without subjecting the patient to the dangers of another form of inebriety, and without the element of secrecy. It is, therefore,

Resolved, That this Society hereby directs its President to refer this subject to a proper committee who shall, before the next regular meeting, ascertain if any member of this Society has identified himself with the manufacture, sale, distribution, or use of any secret remedy, contrary to the Code of Ethics under which this Society is organized, and if so, that such member or members be recommended for expulsion from membership in this Society at said next regular meeting.

College of Physicians; Presentation of Portraits.—A banquet was given by the College of Physicians of Philadelphia on Saturday, April 30th, on the conclusion of which each member drank from the loving-cup to the memory of the late D. Hayes Agnew. Dr. Horatio C. Wood, on behalf of the medical profession of Philadelphia, formally presented to the College a fine portrait of Dr. Alfred Stillé, a former president of the College. The portrait was received by the President, Dr. S. Weir Mitchell. Dr. Mitchell, on his own behalf, presented a portrait of Dr. Oliver Wendell Holmes, accompanying the presentation with a poem. Dr. J. K. Mitchell read a reply in verse sent by Dr. Holmes, who was unable to be present. The portrait was received by the Vice-

President, Dr. J. M. DaCosta, who paid an eloquent tribute to the original of the portrait and to the donor. The exercises also included an address by Dr. J. W. Holland, on the "College"; one by Dr. William H. Welch, of Baltimore, on "Associate Fellows," and one by Mr. Talcott Williams, on "The Patient."

The Association of American Physicians.—In addition to the papers already announced for the meeting of May 24th, 25th, and 26th, the following will also be presented:

"The Treatment of Experimental Tuberculosis by Koch's Tuberculin, Hunter's Modifications, and Other Products of the Tubercle-bacilli," by E. L. Trudeau, of Saranac Lake; "A Case showing Symptoms of Landry's Paralysis—Recovery," by A. McPhedran, of Toronto; "The Areas of Anesthesia in Spinal-cord Lesions as a Guide to Localization," by M. A. Starr, of New York; "The Different Forms of Cardiac Pain," by Samuel G. Chew, of Baltimore; "The Late Systolic Murmur," by J. P. Crozer Griffith, of Philadelphia; "Influenza and Some of Its Present Aspects," by Morris Longstreth, of Philadelphia.

A Medical Organization for Social Purposes.—It is proposed to establish a club for social purposes, restricted in its membership to members in good standing in the *Regular Profession* of Medicine in Philadelphia. A modest club-house is to be secured in a central location, to be fitted up with chess-tables, billiard-tables, etc., where meetings can be held, committees have accommodations, and members may congregate for social intercourse. A reading-room is to be opened where may be kept on file the principal medical journals, the literary magazines and journals of the day. It is contemplated to have occasional (monthly or bi-monthly) dinners, to which non-members of eminence may be invited. The fees and dues are to be moderate, ten dollars initiation at present, and annual dues of ten dollars.

Those who may feel interested in the formation of such an association, and who may wish to be present at a general meeting for the purpose of organization, are invited to communicate at an early day with Dr. Lemuel J. Deal, 2119 Howard Street.

The Fourth International Congress for the Study of the Abuse of Alcohol will be opened on September 8, 1892, at The Hague. The following subjects will be discussed: Alcoholism from a moral, hygienic, and medical point of view; The preventive and educational means employed to correct the abuse of spirituous liquors (societies, meetings, the press, popular entertainments); The coercive means available by the State and the community to overcome drunkenness.

Philip Biedert has been elected Professor of Pediatrics at the University of Innsbruck.

Carl Guenther has been appointed an assistant in the Hygienic Institute at Berlin.

The Third International Congress for Criminal Anthropology will be held at Brussels from August 7th to 14th.

Germain-See has withdrawn from the editorial management of *La Mèdecine Moderne.*

BOOKS AND PAMPHLETS RECEIVED.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane. Providence: The Press, 1892.

Some of the Influences Which Affect the Power of the Voluntary Muscular Contractions. By Warren P. Lombard, M.D. Reprint, 1892.

Intra-thoracic Surgery. By DeForest Willard, M.D., Ph.D. Reprint, 1892.

The Second Year's Work in Diseases of the Rectum at the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint, 1892.

Systemic Infection from Gonorrhea. By Bedford Brown, M.D. Reprint, 1892.

A System of Gynecology. Based upon a Translation from the French of Samuel Pozzi. Revised by Curtis M. Beebe, M.D. With 359 Illustrations. New York: J. B. Flint & Co., 1892.

Outlines of Zoölogy. By J. Arthur Thomson, M.A., F.R.S.E. Illustrated. New York: D. Appleton & Co., 1892.

Transactions of the American Orthopedic Association, Fifth Session, held at Washington, D. C. Vol. IV. Philadelphia: Published by the Association, 1891.

Diseases of the Eye. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, M.D. With 216 Illustrations and 2 Chromo-lithographic Plates. Philadelphia: W. B. Saunders, 1892.

Enlarged Tonsils, and Their Harmful Effect on Health and Development. By William T. Cathell, M.D. Reprint, 1891.

The Teachings of Experience and of a Rational Therapeutics as to the Treatment of Pneumonia. By Boardman Reed, M.D. Reprint, 1892.

A Treatise on Medical and Surgical Gynecology. By S. Pozzi, M.D. Translated from the French edition, with Additions by Brooks H. Wells, M.D. Vol. II. With 174 wood-engravings, and 9 full-page plates in colors. New York: William Wood & Co., 1892.

A Junior Course of Practical Zoölogy. By A. Milnes Marshall, M.D., D.Sc., M.A., F.R.S. Assisted by C. Herbert Hurst, Ph.D. Third Edition. London: Smith, Elder & Co., 1892.

Transactions of the American Pediatric Society, Third Session, held in Washington, D. C., September 22 to 25, 1891. Edited by William Perry Watson, A.M., M.D., Recorder. Vol. III. Printed by Fairchild & Co., 1892,

A Text-book of the Practice of Medicine. For the Use of Students and Practitioners. By R. C. M. Page, M.D. New York: William Wood & Co., 1892.

Text-book of the Eruptive and Continued Fevers. By John William Moore, B.A., M.D., M.Ch. Univ. Dubl. New York: William Wood & Co., 1892.

Diseases of the Nervous System. By Jerome K. Bauduy, M.D., LL.D. Second Edition. Philadelphia: J. B. Lippincott Co., 1892.

Lectures on General Etiology, Delivered at the Chicago Medical College. By H. Gradle, M.D. Pamphlet. Chicago: W. T. Keener, 1892.

Intestinal Anastomosis and Suturing. By Robert Abbe, M.D. Reprint, 1892.

A Contribution to the Study of Headaches. By Joseph Collins, M.D. Reprint, 1892.

Cases of Gall-bladder Surgery. By Robert Abbe, M.D. Reprint, 1892.

COMMUNICATIONS are invited from all parts of the world Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

THE PRESENT STATUS AND CLAIMS OF ELECTRICITY IN GYNECOLOGY.

BY G. BETTON MASSEY, M.D.,
OF PHILADELPHIA.

TRIPIER, of France, the father of electro-therapy in the diseases of women, writing first in 1859, initiated a movement that failed to attract the attention of the profession until the genius, patience, and perseverance of his pupil, Apostoli, imperatively commanded an audience. Making his first contributions upon the subject in 1881, the latter soon extended the claims of his teacher beyond the value of faradic currents in the puerperal condition and in displacements, and promulgated that series of essays on his method of treating fibroid tumors of the uterus that soon made it a familiar subject throughout the scientific world. The first of these communications was made in 1884, and was soon followed by corroborative reports from other observers in many lands and in many languages; but it was followed also, as a natural consequence, by fierce attacks from the surgeons who had but just begun those bloody experiments that have not yet overthrown the earlier dictum enjoining the non-removal of these growths.

The controversy thus provoked became warm, but lost much of its fervor when distinguished English surgeons—such as the Keiths and Sir Spencer Wells—ranged themselves on the side of the electro-therapeutists. The method could not fail to be largely adopted when advocated by such an one as the elder Keith, who himself possesses a still unrivalled record in the surgical removal of fibroid tumors. Hastily adopted by many gynecologists, some of whom were profoundly ignorant of the most rudimentary knowledge of the proper mode of handling so subtle an agent as electric force, the progress of the remedy in this affection has yet steadily advanced toward the realm of fixed facts, enshrined in a bewildering abundance of contributions to the journals. In America alone the stimulus thus given to the electric treatment of fibroids and other affections of women has already resulted in the production of four treatises in book form,[1] besides a lengthy contribution to the American Gynecological Society.[1]

There is, I believe, no exception to the rule that all those observers who were competent to make an intelligent study of the uses of electricity in gynecology have arrived at conclusions that point to its great value, and not a few of them look upon the methods as yet in the infancy of a most useful life. An intelligent comprehension of the future of methods possessed of such apparent possibilities—methods that admit of direct penetration to diseased tissues and the convergence therein of many known and many yet unknown remedial agencies—cannot do otherwise than compare them with the recent triumphs of electricity in the arts and industries. May not this future progress of medical and surgical electricity be phenomenal also? But a hundredth part of this pace would revolutionize both medicine and surgery, already enriched by these newly discovered powers of hitherto unheard-of strong currents and the less known cataphoric actions by which useful drugs may be carried through the skin and tissues to actual seats of disease.

Confining attention to existing knowledge of the subject, a brief outline may be given of the present status of electro-therapeutics in gynecology, in the shape of a collection of opinions such as the writer is compelled to send daily to inquiring physicians whose engrossing work in other directions is more than ample excuse for a lack of familiarity with the latest details and results in this field of special practice.

Fibroid tumors. In the writer's personal experience, six of these growths have disappeared by absorption under electric treatment. One of these was as large as an adult head, extending above the umbilicus, the bulk of the remainder being much smaller. Of the other cases, about 92 per cent. were arrested and reduced in size in varying degrees, a symptomatic cure, in the removal of pain, hemorrhage, etc., being practically invariable. About 8 per cent. were unsuitable for this mode of treatment.

The cases best suited for the method are those that present nodular, interstitial growths of all sizes

[1] Massey, G. Betton: Electricity in the Diseases of Women. Philadelphia: F. A. Davis, 1st edition, 1889; 2d edition, 1890.
Bigelow, H. R.: Gynecological Electro-therapeutics. London: H. K. Lewis. Philadelphia: J. B. Lippincott, 1889.
Grandin and Gunning: Electricity in Gynecology. New York: William Wood & Co., 1891.
Goelet, Augustin H.: The Electro-therapeutics of Gynecology. Detroit: George S. Davis, 1892.

[1] Engelmann, George J.: The Use of Electricity in Gynecological Practice. St. Louis: Reprint from Gynecological Transactions, 1886.

and in which the uterine cavity is involved and enlarged. Hemorrhagic complications probably favor ultimate decrease and disappearance, these complications themselves being readily removed. The unfavorable cases are those in which the growths are subperitoneal and but slightly connected with the uterus; the tumor being too far removed from the cervical portal of treatment. When very large, they may be reached by puncture through the abdominal wall. The edematous and soft myomata are unsuited to the ordinary mode of applying strong currents, but may be helped and at times greatly reduced by patient percutaneous treatment, while the degenerating fibro-cystic variety is still regarded by many as contra-indicating electric treatment.

Chronic metritis and subinvolution. Catarrhal and inflammatory affections of the uterus, so often the initial points of ovarian and tubal disease and malignant growths, offer probably the most important field for electricity in gynecology. As a topical application to the uterine cavity, electricity is possessed of many advantages, with which are associated even more important contractile and sorbefacient actions, increasing the tone of the relaxed and congested muscular tissue and promoting metabolic changes in the older cases characterized by sclerosis. Avoiding the dangers and discomforts of other less effective remedies, such as the application of acids and of iodine, and the curetting operation, electricity does not accomplish results by harshly destroying the mucous membrane, but by a stimulation of cell-activity in all the affected tissues, the influence on the neuro-muscular elements being unique. In those instances in which the affection is no longer restricted to local lesions, but involves the nervous system and the general health, the local treatment should be supplemented by general tonic applications of electricity and massage. The association of nervous break-down and neurasthenia with this condition has been noted for many years, and it is only lately that its importance is in danger of being neglected in favor of views that relegate the mischief entirely to the nervous system. Having failed to cure their cases by scraping and by repairs of innocent tears of the cervix, many surgeons have begun to deny the importance of these catarrhal hypertrophies, placing their patients on the rest-treatment as a last resort. Catarrhal hypertrophies are productive of even more mischief within the uterus than within the nasal cavities, and it is only when associated with properly directed treatment to the original focus of disease that the rest-cure can remove the results of the local affection. A divorce of gynecologic from neurologic treatment in such cases is inimical to complete success. In my experience some cases of neurasthenic backache, associated with enlarged uterus, have yielded to single applications of the galvanic current within the uterus.

Another class of cases of chronic metritis is neglected because the surgeon's attention is directed exclusively to secondary affections of the tubes and ovaries, and the appendages are removed under the impression that they alone are diseased. In these cases a continuance, or even an increase, of the pain is the inevitable result of the operation until the true nature of the affection is recognized and proper treatment instituted.

In recent subinvolution of the uterus after childbirth the faradic current is usually sufficient, though coëxistent metritis will always require the conjoined employment of galvanic treatment for its topical action. The treatment of the later stages of subinvolution does not differ materially from that adapted to chronic metritis, though less time is usually required to accomplish a permanent cure.

Metrorrhagia. In post-partum hemorrhage strong faradic currents from the primary wire are instantaneous in causing contraction of the uterus, with cessation of the bleeding. The current is preferably applied by an aseptic, intra-uterine bipolar electrode, but in its absence any monopolar electrode that has been steeped in boiling water may be inserted and the circuit completed by a large abdominal pad. In hemorrhage more remote from the puerperium, including that due to retained decidual shreds, the faradic current becomes progressively less valuable than the galvanic, the cases of hemorrhagic endometritis and menorrhagia requiring the latter. Under the action of currents of from ten to seventy milliampères the fungous and granular surfaces of the endometrium are freshened and quickened and the smaller shreds detached and permitted to drain away, and thus the source of the troublesome dribbling corrected without harsh scraping. The positive pole, which is usually the best for this purpose, has the incidental advantage of being decidedly microbicidal when the current is strong, as ascertained experimentally by Apostoli and Laguerrière.[1]

Displacements. Nearly forty years ago the doctrine was advanced that flexions and versions of the uterus were not in themselves important, and gave rise to suffering only by reason of other conditions associated with them. This view, though early buried under an avalanche of pessaries and other mechanical supports devised under an opposite belief, has of late been revived by those that not only doubt the correctness of the principles involved in the use of pessaries, but are in a position to see the harm done by the pressure of these devices on inflamed and tender ovaries and

[1] Reprint from Répertoire de Police Sanitaire, Vétérinaire et d'Hygiène Publique. Paris, 1891.

the stretching of already weakened vaginal supports. The truth probably lies nearer the assertion of the secondary importance of the displacements in the majority of cases, though its demonstration in the past has been hampered by inadequate means for the cure of the associated conditions. Now that the metritis, endometritis, and perimetritis may be successfully combated by the restorative action of galvanic currents, the real harmlessness of many deviations in the position and shape of the uterus becomes manifest, though often the deviations themselves are lessened by the curative process. Lacking the causative congestions and inflammatory conditions, it is hard to see how they are as important as has been assumed, and, if so, how the placing of an unnatural skeleton in the vagina is to accomplish a cure rather than mere amelioration. Such artificial aids to regain a supposedly correct straightness cannot in any way compare with the natural muscular supports of the uterus, and when removed must leave these structures even more relaxed and weakened than they were before. Such relaxations of the vagina, due to atrophy of the muscular fibres of its walls, require toning and stimulation rather than further weakening by the distention of pessaries and tampons. It is an orthopedic question, and all experience with weakened muscles on the exterior of the body teaches us that apparatus is secondary to electricity, massage, and gymnastics. Either faradic or galvanic currents are most useful in restoring muscular force and vigor and retaining prolapsed uteri in normal position, unless by reason of deep tears of the vaginal muscles or of profound degeneration the organ is beyond other aid than that given by such devices or by surgery. When this toning is possible, important subsidiary results may follow in the lessening or removal of atonic dispareunia, which is often at the bottom of weakened conditions in both sexes.

Ovaritis, salpingitis, and peri-uterine inflammation. In these distressing conditions the recent doctrine has been taught that amputation of the ovaries is the only remedy. I shall not discuss the startling frequency of this mutilation of the body, or the increased pain rather than relief that results at times in non-fatal cases; but I wish to affirm that chronic inflammatory affections of the adnexa that are unaccompanied by abscess or cystic accumulation are almost invariably amenable to relief and cure by the interpolar action of the galvanic and faradic currents. The results are at times as striking as those that follow a similar percutaneous application to a sprained ankle, the engorgement, hyperplasia, and plastic exudates being dissipated and absorbed, and a case otherwise condemned to the uncertainties of an operation for castration restored to practical and permanent health. Some old adhesions will remain, it is true, as in an old pleurisy, but the active morbid condition from which the patient suffered will be cured. The most obstinate cases are not those in which ovarian and perimetric inflammation predominates, but the tubal cases; yet in these, also, continued treatment will often achieve complete restoration of health, without mutilation or the artificial production of conditions that normally occur in old age. Cases of simple ovaritis attended by ovarian congestion, cases of enlargement and of ovaralgia, are quickly amenable to treatment, the writer having notes of a number of such cases in which this treatment was successful when undertaken after a day had been set for operation.

Menorrhspasm and menorrhalgia. Personal observation of the curability of painful menstruation by the use of the galvanic current during the intermenstrual period led me to make a reëxamination of the prevalent views of the nature and causation of the affection several years ago, the results being reported to the Philadelphia Obstetrical Society. The conclusions arrived at were that what has been called obstructive dysmenorrhea is extremely rare, the supposed stenosis being a mere spasmodic contraction of the circular fibers of the internal os. The morbid element is not obstruction, but functional spasm, as already proved by Schultze, who showed that accumulations never existed. An even better proof may be obtained by subjecting a patient, while in the throes of the pain of menorrhspasm, to a simple abdomino-dorsal application of the galvanic current, by means of large electrodes, on one of which the patient reclines. If the current is turned on without shock until a strength of a hundred or a hundred and fifty milliampères is reached, the pain will usually be quelled for that period, and a freer flow is immediately obtained. If the pain and lack of flow were due to fibrous constriction, the current would intensify the pain rather than relieve it, for it would increase the force of the alleged "mimic labor," and could not, thus applied, relax a fibrous stricture. To accentuate this view of the pathology of the trouble the name menorrhspasm was proposed in place of dysmenorrhea, the latter having received too mechanic a meaning in the past. Symptomatically considered, it was but a menorrhalgia due to hyperesthesia of the uterus and adnexa, the attempt at functionation causing a painful neuro-muscular storm. Moderate galvanic currents by the vaginal or uterine method, in accordance with the condition of the endometrium, allay the causative hyperesthesia, stimulate undeveloped organs, and cure associated catarrhal tendencies. About two inter-menstrual periods constitute the usual time required.

Pelvic neuralgia. Persistent pain in the pelvic region, particularly in the neighborhood of the

ovaries, or radiating from the pelvis to the hips, back, and thighs, may be due to organic congestion and inflammation, to inflammation of the pelvic nerves, or to centric disease of the nervous system, an exact diagnosis being at times impossible. When due to congestion, as in youthful persons and in those with undeveloped organs, the faradic current of the fine wire is most efficient (as maintained by Tripier, Apostoli, and others), when associated with general electric treatment and massage. If inflammation is found, the methods detailed elsewhere should be employed and will usually be found effective.

The existence of inflammation of the cerebro-spinal nerves of the pelvis has received no attention so far from either writers or clinicians; yet undoubted cases have occurred in the writer's experience. In character of pain the affection much resembles sciatica, except that the situation is usually in the neighborhood of the ovaries or higher up. The sclerotic ovaries that have at times been ineffectually removed for the relief of this neuritis indicate one of its effects, and emphasize the neural origin of the trouble. In the treatment of this variety of pelvic pain the franklinic current has value at times, though resort must usually be had to the galvanic, as in sciatica and crural neuralgia. Some cases are of undoubted centric origin, and in these neither electricity nor removal of all of the contents of the pelvis piecemeal will avail anything in affording relief.

Neurasthenia and nervous prostration. In considering the place and importance of electricity in neurasthenia and nervous prostration, the writer should state that the first name, neurasthenia, is applied by him to those cases that, grossly speaking, are traceable to some internal or constitutional cause, while the term nervous prostration is reserved for the cases clearly occasioned primarily by an external stress, either mental or physical. The two conditions insensibly shade into each other; yet important practical differences are often noticeable. As to the nature of these multiform diseases and their causation it is, of course, true that neurasthenia in the female is frequently a reflex from the irritation of a metritis or ovaritis, and in such cases good results can only be obtained after cure of this initial point of disease. There are, nevertheless, many cases that are not associated with pelvic disease, and in these there can be no question of the correctness of the hypothesis of Beard that places much of the onus on the central nervous system itself; yet a still more remote and real cause is doubtless the auto-intoxication of the individual by vitiated secretions. Incapable of producing healthy products, by reason of lessened vigor in the nerve-centers, the secretory organs of the body, particularly those of the digestive and assimilative apparatus, permit re-absorption of poisonous ptomaïnes that, in the peculiar condition of the nervous system, reinforce the original conditions giving rise to them, thus maintaining a vicious circle of chemic and vital reactions.

In the treatment of these conditions electricity is usually associated with the other features of the "rest-cure," though also often found by the writer efficient without them; but experience has led me to vary this feature somewhat from the plans followed during my early association with the distinguished author of the rest-treatment of nervous disease. Instead of relying mainly on faradic stimulation of the muscles of the exterior of the body, the galvanic current is applied to the same parts by the mono-polar, labile method and large flexible electrodes, carrying from ten to forty milliampères. By this means even more thorough contractions may be obtained than with the faradic current, with a far greater stimulation of the vital processes of the periphery, resulting in a more useful reaction and quicker disappearance of cold extremities and other evidences of vasomotor stasis. Conjoined with this, a more profound impression is made on the spinal centers and the abdominal nerves and viscera by strong labile galvanic currents, which are rendered agreeable by means of large, saponified polar surfaces. The comparative results obtained with and without these features have proved that they are a most important part of the rest-cure methods, and may even be employed without the other features in cases that do not take kindly to the more rigorous measures of enforced rest and seclusion.

Hysteria. Electricity is an invaluable agent in hysteria, but the various currents that may be used require little comment, since any and all methods have met alike with success and failure. When the therapeutic results of the electric force cannot be separated from the possible chance of being mixed with the effects of suggestion, scientific investigation is at a serious disadvantage; yet it should not be forgotten that our efforts are directed toward a cure, in most instances, rather than investigation. A lack of rational explanation does not detract from the practical value that is so frequently demonstrated. When directly of value in hysteria, electricity doubtless acts by improving the organic functions.

Spinal irritation. Whatever may be the pathology of this ill-defined condition, there can be no question of the value of galvanic currents and franklinic sparks in the cases of nervous young people, chiefly young women, whose most striking objective symptom is a tenderness of the spinous processes of the vertebræ, and whose subjective symptoms are legion, centering about a weakened back. The treatment recommended for neurasthenia is also adapted to this condition, which is, in fact, not easily separated from neurasthenia; but the most useful feature is

unquestionably the direct electric treatment of the spine.

Insomnia. Though essentially a symptom rather than a disease, continued wakefulness may assume primary importance by the establishment of a vicious habit of the nervous system. The use of drugs for the correction of any but the most temporary of such conditions cannot be too greatly condemned, as there is danger of substituting an even more deplorable habit. Associated with a search for and correction of the causes of insomnia, the direct treatment should employ all the known external agencies for favorably altering nerve-habits, chief of which are electricity and massage. The former should rarely be applied immediately before sleep is sought, but earlier in the day, to permit of the reposeful reaction that in some cases does not appear for several hours. This is especially true of the earlier stages of treatment, when increased wakefulness will at times result temporarily if the application is too near the hour of retiring. The daily administration of general franklinic sparks, varied in power according to the case, is probably the most useful method, though it should be usually associated with either general faradic stimulation or the galvanic method recommended for neurasthenia. Under these means the insomnia will yield within a few weeks, and if the original cause can be removed, "Nature's sweet restorer" may be enjoyed in its pristine comfort.

Gastro-intestinal torpor and obstruction. The field of usefulness of electric currents in torpid conditions of the gastro-intestinal tract extends from the slight habitual constipation so common in gynecologic cases to the most profound intestinal paralysis and obstruction; and in the last-named conditions a large number of cases are now capable of being saved that would otherwise be beyond relief under medicinal or surgical treatment. The galvanic current is the most useful in all the conditions just named, doubtless owing to the fact that in simple constipation the stimulating action exerted by it (in common with the faradic current) on the muscular layers of the bowel, gall-bladder, and the various glandular ducts, is supplemented by a stimulation of the secretory functions of the stomach, liver, pancreas, and intestinal glands. This power of the galvanic current may be illustrated at any time by making an application to the parotid gland, and an external application of a strong labile current to the region of the liver will usually result in distinct evidences of increased discharge of bile. By the percutaneous method each organ may be brought under the mild influence of this current, but a greatly increased action is possible in the case of the stomach and the lower colon by placing one pole within the viscus. In moderate torpor the external method will usually suffice, and both currents may be used, either in succession or simultaneously.

Diseases of the bladder and urethra. In neuroses of the bladder and urethra, not demonstrably connected with organic disease, the faradic current, applied directly within the canal or cavity, is of much service. The fine-wire current is indicated. In incontinence of urine due to relaxation of the sphincters or to the presence of residual urine in a bladder affected with atony of the detrusor muscles the primary faradic current, applied by the swelling method, is of exceedingly great value. The method is also indicated as an adjuvant in the treatment of cystitis, with retention of residual urine. Chronic urethritis, disseminated or occurring in patches, demands the negative pole of a weak galvanic current as the most certain means of obtaining a radical cure. A purely physical use of electricity in diseases of the bladder is the electric-light cystoscope, by which the interior of the bladder may be illuminated and brought within the range of vision.

Neuroses of the vulva. The galvanic current has been recommended in pruritus vulvæ, ten milliampères positive being applied by means of a large pad-electrode. For irritative conditions of the vulva, giving rise to vaginismus, the same method is useful, accompanied by the fine-wire faradic current from an electrode in the introitus. It might be useful to moisten the cotton of the carbon electrode with a weak solution of cocaine, as the quick diffusion of this remedy by the current from the positive pole inward has been clearly proven.

Amenorrhea. In the suppressio mensium of young girls, due either to change of environment or habits or to catching cold, abdomino-dorsal galvanic applications will quickly restore the function. If anemia exists, the responses will naturally be slower, but the value of the applications mentioned, as a tonic to the blood-making organs, should indicate their persistent employment until the system can meet the periodic call upon it. Local treatment is, of course, not called for in such cases, though the value of the negative pole, applied within the cavity of the uterus, in reëstablishing and increasing the flow in parous women, is very well known.

Chlorosis. The employment of combined abdomino-dorsal currents, with large poles, in chlorosis is an extremely valuable adjuvant to iron and the eliminative treatment.

Sterility. One of the claims for electricity that has thus far been relatively neglected is its value in the treatment of matronal sterility due to disorders of the uterus and Fallopian tubes. The taste of American women is such as to call for but little work of this sort, but a fortunate experience of the writer among Hebrews, who universally desire off-

spring, has convinced him, by the unquestionable evidence of births from long-sterile women, that the method is one of great value. The mode of action may be by ovarian stimulation; but, as all the cases treated presented evidences of catarrhal affections of the uterus or of the uterus and tubes, some being veritable examples of patulous pus-tubes, a more reasonable explanation is that a cure of the catarrh has rendered it possible for an ovum to survive contact with secretions that had been poisonous. The methods are those used in the milder cases of chronic metritis.

Extra-uterine pregnancy. Notwithstanding the extreme position of some surgeons that an abdominal section should be performed as soon as reasonable suspicion of this unfortunate accident arises, the verdict of many is that electricity should be employed at once in case the condition is suspected to exist and the discovery is made prior to an intra-abdominal rupture of the sac. The advantages of this procedure are: No harm is done if the diagnosis is incorrect; if the pregnancy has not advanced to the fourth month the fetus and membranes will be absorbed, and no operation will be required; if the pregnancy has advanced beyond the fourth month the arrest of fetal vitality will render subsequent operation safer and lessen the chances of rupture. After the arrest of the vitality of the fetus the galvanic treatment should be continued for some months to promote absorption of the ovum itself, the incubative hyperplasia surrounding it, and any hematoma that may have formed.

Tumors of the breast. In acute mastitis after childbirth the faradic current will be found of considerable service in reducing congestion and inflammation, if applied at each renewal of the indispensable bandaging. Chronic inflammation of the breast, or of one or more of its lobes, is best treated by the galvanic current in association with massage, and speedy results may be anticipated.

For non-malignant tumors of the breast the galvanic current is almost a specific, whether the tumor be a mere nodular enlargement of the lobe or a fibroid. In either instance the external, percutaneous application of the current from well-proportioned electrodes will often be quite sufficient, though fibroid growths will at times require electro-puncture. It may be safely asserted that the prevalent employment of these means in such cases will effectually dispose of the doctrine advocated by some surgeons that any tumor of the breast should be removed on general principles.

Carcinoma. Under the stimulus of an increasing familiarity with the value of electricity in fibroid tumors, a method of treating malignant tumors by electrolysis that was first employed some years ago has been recently revived, and bids fair to be a weapon of vast importance in these affections. It consists essentially in the use of strong currents confined to the growth and the immediately subjacent tissue, whereby the malignant cell-structure is destroyed, either by electrolytic decomposition or by histologic shock. The latter method is the one claimed to occur by Inglis Parsons, who uses as strong a current as one of 600 milliampères, by multipuncture and sudden reversals of the current. Under the electrolytic method, which differs only in the absence of current reversals, the softer forms of carcinoma will be dissolved into a brownish liquid by currents of strengths of from 400 to 600 milliampères, and this, too, without pain, unless the action is carried beyond the diseased tissue. The method may, therefore, be employed in many cases without an anesthetic, and should be persisted in until all vestige of the growth has disappeared. This bipolar method should be followed by the monopolar method, also, in order that the affected channels of communication with the body may be traversed also by destructive currents. In epitheliomata of the softer kind it is probably true that these channels rather than the healthier tissues surrounding them receive the brunt of the current, for the physical reason that the carcinomatous tracts are better conductors than the less watery tissues. The degenerate tissue seems also to have a lessened vital resistance, as it is more easily rendered necrotic by the current. The electric methods have the additional advantage of controlling pain and hemorrhage during their employment. Besides the ease and the painless nature of the electric method of curing carcinomatous growths, it is probable that the power of following the growth through its roots and ramifications presents a most important advantage of this method over that by the knife or cautery.

The cosmetic applications of electricity. A review of the uses of electricity in the restoration of the health of women would be incomplete without a notice of the value of this agent in the removal of certain blemishes of the skin that at times do so much to disturb the mental health and equipoise. I allude to the removal of superfluous hair, moles, warts, nevi, and port-wine marks by the use of the electric needle. In the removal of hairs no other method can compare with electrolytic destruction of the hair papilla, and in the other troubles mentioned the advantage of electricity resides in its simplicity, relative painlessness, and the certainty of either leaving no scar or a smaller scar than treatment by any other method.

The Northwestern Society of Philadelphia meets on the second Tuesday of each month at the office of different members. The society is two years old and has a membership of thirty. Its objects are scientific and social.

SURGICAL DISEASES OF THE URINARY ORGANS.

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IN this paper, and in the one or more succeeding, I shall confine myself to the diagnosis and treatment of that common and painful malady known as stone in the bladder, reserving for future occasions what I may have to say concerning some other affections of the urinary organs.

It is proper to observe here, by way of preface, that these organs, the kidney, the ureter, the bladder, the prostate gland, and the urethra, are liable to certain diseases to which surgeons have directed their special attention, and that these diseases have by common consent been called surgical diseases of the urinary organs. They have been conveniently classified in two divisions—those that are inflammatory and those that are obstructive in their nature. The inflammatory diseases are nephritis, ureteritis, cystitis, prostatitis, and urethritis. The obstructive diseases may be arranged under the following heads:

1. Stricture of the urethra.
2. Tumors of the bladder.
3. Tumors of the prostate gland.
4. Enlargement of the prostate gland.
5. Stone in the prostate gland.
6. Stone in the urethra.
7. Stone in the pelvis of the kidney.
8. Stone in the bladder.

It is of the last-named malady that I now wish to speak.

First, as to the diagnosis of stone in the bladder. To know accurately the disease one has to deal with and to point it out—this is diagnosis, and it is of the first importance. It is an art, and can only be successfully practised by obtaining an accurate knowledge of all the facts bearing on the case to be examined, and then deducing the true inference from these facts. To do this, skill and experience and accuracy of observation are necessary. The line of examination is held on the rational and on the physical symptoms.

The rational symptoms of stone in the bladder include frequency of urinating, the existence of pain, the altered character of the urine, together with the manner of its passage, and the passing of a little blood now and then. The result of a careful examination of the patient under these several headings may lead to a very pronounced *suspicion* as to the existence of stone, but its actual presence in the bladder can only be determined by passing into the bladder a sound, and with this instrument *there* touching the stone.

The description of the sound, together with the manner of passing it through the urethra and into the bladder, "the act of sounding," as it is called, I shall carefully describe when, further on, I shall speak of the physical symptoms of stone.

I repeat, that while the several rational symptoms or signs enumerated, viz., frequency of urinating, pain, the altered character of the urine, the manner of its passage from the bladder, and the presence of blood, point to stone, yet it must not be forgotten that the positive existence of stone can only be demonstrated by instrumental touch. In short, these rational signs are not always to be depended on; they exist in other affections of the urinary organs and are not peculiar to stone alone. Thus, the bladder when inflamed will not tolerate the presence of urine but to a limited amount, and in contracting to expel it pain will be developed, and if the inflammation be intense there may be some blood and pus mingled with the urine, thereby altering its character. Then there may be enlargement of the prostate gland compressing the urethra, or a stricture of the urethra in its membranous or its penile portion, altering the stream of urine in its passage. In how far then the rational signs may determine the surgeon to make an instrumental examination, it may be well to state:

First, in regard to the frequency of urinating; while this is found to be present for the most part in all the diseases of the urinary organs of an inflammatory nature, and especially when the inflammation is acute, yet it is a prominent symptom of stone, and in relation to the exact time of its occurrence is of much diagnostic value.

At night, when the patient is in bed and the body at rest, the bladder is found to tolerate a larger quantity of urine than it does during the day. Motion causes increased irritation of the bladder, and hence its more frequent contraction to expel its contents. The presence of a stone contributes under motion to increase this irritation and consequent frequency of the act of passing the urine. Hence, the value of the observation in regard to the time of increased activity on the part of the bladder. When there is enlargement of the prostate gland, without the existence of stone, there is greater frequency of urinating during the night than there is during the day.

In regard to the symptom of pain, its locality and the time of its occurrence are of much diagnostic significance. Riding over a rough road, a false step, a sudden or unexpected jar from any cause, will develop pain in the bladder, and especially at the extremity of the penis; and after making water, the bladder continuing to contract on a stone, there will, as a general thing, be greater pain than ordinarily, which will continue for some time, indeed until the urine, pouring down the ureters from

the kidneys, gently lifts the wall of the bladder from the hard stone; then the pain will in a measure cease. If the bladder is contracting, after urination, only on an enlarged or chronically inflamed prostate gland, the pain at this moment will not ordinarily be so great and is located for the most part in the perineum. When the bladder alone is inflamed, the pain comes on before making water and is located behind the pubic bone. In stricture of the urethra the pain is located for the most part at the seat of the stricture. In children having stone, there is not only severe pain after making water, but there is such a constant irritation between times, referred to the extremity of the penis, that pulling and rubbing the foreskin by the little sufferer is so frequent that this structure becomes hypertrophied to a marked degree. The amount of pain does not always depend on the size of the stone. A boy, eleven years old, from whom I removed by lithotomy a uric-acid stone ten grains in weight, had suffered excruciating pain for three years. When he came under my care, the mucous membrane of the rectum and the lower bowel projected eight inches from the anus, while straining, after making water. The mucous membrane and the submucous tissue were greatly thickened. The little patient was restored to health some weeks after the operation. Some months after this, a man, forty years old, consulted me on account of a bladder-trouble of long standing; but only of late had it pressed him to seek relief. His general health was and had been good. The rational symptoms were not well marked; only the appearance of blood to an increased amount of late after riding horse-back had awakened his anxiety. On sounding him I found a large stone and advised its removal. He consented, and I removed the calculus by bilateral lithotomy. It was found to be composed of triple phosphates, and measured 1¾ inches in its narrowest diameter, and 2½ inches in its longest diameter, and weighed 2 ounces and 180 grains. The man made a rapid and good recovery. The adult man may carry a small stone in his bladder for a long time without even suspecting the presence of a foreign body; the symptoms, the evidence of its presence, may at times be so slight as not to arrest his attention, or if noticed, are often attributed to other causes and are neglected, and thus the stone is allowed to increase in size until there is an awakening that drives him to seek relief.

In order to observe to what extent the urine is altered in character, it is necessary first to know its normal state; and, being a complex fluid, it is convenient in making an examination to have recourse to a form in which its healthy and its unhealthy constituents may be recorded side by side. The urine to be examined should be about four ounces or more in quantity. To obtain such a specimen the patient should always be instructed not to collect the first two or three tablespoonfuls in urinating, but to allow about this amount to pass off free, and then continuing to urinate let the fluid flow into a clean bottle, the object being to wash out the urethra, as it were, before collecting the specimen to be examined; otherwise it may contain urethral discharges, which, in examining the urine for information in regard to bladder-trouble, may be misleading. I have used the following form for a number of years in examining urine, and have found it satisfactory:

Analysis of Urine. Day. Month. Year.
Case. A. B.

PHYSICAL CHARACTERISTICS.

24 hours' quantity. Sediment.
Color.
Reaction.
Sp. gr.

NORMAL SUBSTANCES.

H_2So_4 test. Chlorides.
Indican. Phosphates.
Urates. Carbonates.
Uric acid. Sulphates.

PATHOLOGIC INGREDIENTS IN SOLUTION.

Sugar.
Albumin.
Others.

MICROSCOPIC EXAMINATION OF SEDIMENT.

Epithelial cells.
Pus-cells.
Crystals, etc.

Diagnosis.—

In a case of suspected stone the specific gravity of the urine, its reaction, its epithelial cells and its pus-cells, the sediment, and the crystals should be noted, and the record preserved for reference; for the urine should be examined repeatedly, and while the case is under observation the results of these examinations should be compared, for from the examination of the urine much light can be thrown on the subject as to the organ affected—whether prostate gland, bladder, or kidney. I shall speak of these subjects hereafter. The manner of the passage of the urine should be noticed, for at times the stone, if one be present, may roll along the neck of the bladder and suddenly occlude the internal meatus of the urethra, so that while making a comparatively full stream of urine it will at once cease to flow and great pain follow on the contraction of the bladder. In many cases of stone this symptom does not exist. It is because of this trouble—this sudden cessation of the stream when it has been flowing freely—that the patient finds that he can urinate

more comfortably by getting on his knees and lowering his abdomen, the stone then being away from the internal meatus of the urethra, until he has emptied his bladder.

The presence of blood, under certain conditions, is more significant of stone in the bladder than any of the other rational signs. The quantity may be, and generally is, small, and may appear only now and then; yet a little bleeding nearly always takes place at some period in the history of the case. In the nature of things we would expect it to appear. The delicate mucous membrane, lashed by the contractions of the muscular coat against so hard, and at times so rough, a body as a stone, is liable to be torn and to have its small capillary vessels ruptured, and bleeding is the consequence. The blood generally appears at the close of the act of making water. It may appear at other times, and again it may be found mixed with the body of the urine. In inflammation of the bladder and of the prostate gland, and in rare cases of tumor of the bladder-wall, some slight bleeding may occur, but this is not often the case.

Of the rational symptoms of stone, the frequency of urinating, the presence of blood, and pain, are of most value as diagnostic aids. Their existence is sufficiently suggestive to warrant the surgeon in asking permission of the patient to make an instrumental examination. This examination is made with a sound and with the index-finger. The sound is a solid steel instrument. For the adult it should be about twelve inches in length, two inches of which should be allowed for the handle. It should be smooth and highly polished throughout its entire extent. Its body should be of uniform size, and differ from the catheter in shape in that the sound should have a short and somewhat abrupt curve at its vesical extremity. For the small and delicate urethra of a child the size of the sound should be No. 7 of the common American scale, and for the adult No. 11 is large enough. The instrument should be but little smaller in diameter than the urethra, in order that it may be moved with freedom. The object of introducing the sound into the bladder should always be held in immediate view; it should be distinctly this—to convey to the mind of the surgeon through the sense of *touch* and through the sense of *hearing* whatever the instrument may come in contact with on its way to and while it is in the bladder—in short, he desires to know the condition of the urethra and the condition of the bladder and its contents.

Before making an instrumental examination of the urethra and bladder the surgeon should thoroughly sterilize his hands and his instruments. He should cleanse his finger-nails and wash and scrub his hands and forearms with soap and warm water, and soak them well in a warm solution of mercuric chloride in the proportion of one part of the chloride to one thousand parts of water. The instrument should be well cleaned and sterilized. The sterilizing of the instruments can be well accomplished by placing them in boiling water for ten minutes and then anointing them with vaselin, each twenty grains of which should contain one grain of carbolic acid. The patient should have his rectum well washed out and be under the influence of ether.

In order to introduce the sound the patient should be in the recumbent position, and the surgeon should stand on the left side of the patient. Holding the sound by its handle with the thumb and index-finger of his right hand and taking the penis by the corona glandis with the thumb and index-finger of his left hand, and holding the organ just in front of the lower part of the linea alba, the beak of the sound is placed in the external meatus of the urethra and carried gently under the pubic arch. The extremity of the sound will now come to the triangular ligament of the urethra, and if the surgeon will elevate the handle of the sound the beak will pass into the membranous part of the urethra and be grasped by the constrictor muscles that surround this portion of the urethra. If the surgeon will now wait for a moment or two, these muscles will relax their grasp, and the sound by its own weight will most probably glide into the prostatic portion of the urethra, and then, by gently depressing the handle of the sound, its vesical extremity will pass into the bladder. In the same manner the ordinary catheter should be passed into the bladder for the purpose of drawing off the urine. Unless there is a stricture or a foreign body in the urethra, there should be no difficulty whatever in the introduction of the catheter or the sound. It is surprising, in the absence of a stricture or a foreign body, to observe what difficulties are made to surround this simple operation of introducing the sound or catheter into the bladder. A knowledge of the anatomy of the parts, with gentleness and a little tact, will ordinarily secure the success of this simple operation.

On one occasion I saw too small a sound used; it passed by a piece of bone projecting into the urethra; a larger sound was used and passed only to the piece of bone, which was readily removed by a perineal incision.

When the curve of the vesical extremity of the sound is completely in the bladder, in the greater number of cases in which a stone is present, the sound will come at once in contact with it. If the stone is not at once felt, the sound should be turned gently on its long axis to the right and to the left and the extremity of its beak made to pass over the lowest point of the bladder, behind the prostate

gland. If, at this time, the surgeon, while holding the sound by the handle with the thumb and index-finger of his right hand, will anoint the index-finger of his left hand and introduce it into the rectum he can examine the prostate gland, its size, and its density, and note any irregularity of its contour that may exist, a matter that may be of much importance in any operative procedure that afterward may be necessary; he will be enabled also to observe the relative depth of the perineum and the relative position of the sound, as well as to dislodge a stone that may be hidden behind the prostate gland. He will also be enabled to observe any thickening or irregularity in the wall of the neighboring portion of the bladder. The surgeon in his first examination may fail to touch the stone with his sound; indeed, several examinations may be made with negative results; but when the stone is once touched with the sound the result is positively affirmative of its presence. The sensation imparted to the fingers holding the sound when it comes in contact with the stone is peculiar, and once experienced cannot fail to elicit attention, and if at this moment the sound is made to tap the stone a distinct and characteristic *click* will be *heard*. The sense of hearing is thus made to confirm the sense of touch. The surgeon should elicit this click. It is well to have a little urine in the bladder in making this examination. If there are more than two or three ounces of urine in the bladder a small stone will not be so readily detected. A large stone is easily found, but when a small stone is present it is of vast importance to the patient that it should be detected. If it is not detected, and if left alone, it will in all probability become a large stone. If a small stone is found, it may easily be removed by crushing. If there should be a very large stone, or a very hard one, such as a calcium oxalate formation, it may be a question as to whether it should be removed by crushing, by perineal lithotomy, or by suprapubic cystotomy. This question will engage our attention on a future occasion.

THERAPEUTICS, PRESENT AND PROSPECTIVE.[1]

BY C. W. BEAUMONT, M.D.,
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MATERIA medica, as now represented in our national dispensatories, exhibits a catalogue of substances, officinal and unofficinal, with their numerous preparations, simple and compound, dry, fluid, and solid, and some hundreds of miscellaneous formulæ, amounting to more than nineteen thousand parts. Deducting unofficinal drugs and formulæ and others used chiefly in the arts, there still remains a list exceeding sixteen thousand in number.

This perplexing accumulation of materials is inherited from a professional ancestry of centuries past, but, like many other legacies, it contains bequests that are undesirable and may well be relinquished. Marvellous as it must be regarded, on account of its magnitude, and also for certain titular emblems of therapeutic authority, attesting its real merit, there are nevertheless weighty objections to it, professional and popular, which demand serious consideration.

In the first category is the fact that a large number of drugs, long since passed into disuse because they are worthless, and many others of such feeble or doubtful power as to be practically useless, and others still not strictly medicinal, are retained.

All of these, together with unofficinal articles and formulæ, eliminated, the ponderous volume lying on our office tables might be reduced to a weight and dimensions that would facilitate instead of hindering ready and frequent reference to its contents. The classification and value of the individual drugs are almost wholly based upon clinical observations alone, and these furnished by many authors, the essential conditions of whose separate work are obviously so various as to render their reports often conflicting and sometimes positively contradictory.

The crudeness of the materials from which we must derive our medicinal resources, and the wide variability in quantity noticeable in each particular drug, resulting from physical, clinical, and meteorologic causes, necessarily leads to inappropriate dosage, and hence to uncertain effect. Even those subjected to careful assay, as, for example, fluid and solid extracts, and obtained from the very best pharmacists, are not wholly exempt from such changes, and when administered produce capricious effects, or, on the other hand, prove to be utterly inert—in either case bringing disappointment and mortification to the prescriber, and, it may be, peril to the patient. Accordingly, in ordering a formula, to be in dram doses, we do not know whether a full or a minimum dose will be had, or, indeed, whether much or little or any medicine at all is received.

But all professional objections weighed together do not counterbalance one that constitutes the only valid exception ever alleged, or that can be urged by the people against our therapeutic method, and that is the extremely offensive character of medicines, as we commonly prescribe and dispense them. This objection is the sole cause of the many alienations from us in the past, and of the daily addition of converts to the delusions of recusant and heretic self-styled physicians. We must admit this objection to be just and reasonable, inasmuch as each of us, from ample observation and perhaps a

[1] Read before the Tennessee Medical Society, April 12, 1892.

little personal experience, knows that our medicaments are generally obnoxious to taste, smell, and sight, often provoking the resentment of the most convivial stomach. The public denunciation is growing constantly in bitterness and vehemence, and the time has come when we cannot with justice to ourselves longer afford to debar a complaint, the further refusal to meet and adjudicate which will be most unwise with regard to our own interest, and ungenerous to our clientage.

Assuming that the foregoing objections to our therapeutics are indisputable, and that professional as well as popular interests demand their removal, a question that should overrule all others in this department of medicine confronts us, and can be answered alone by scientific medicine and in such manner as to silence at once and forever the perpetual clamor against our repulsive measures. The question the solution of which we are to work out, is not at all *can we*, but is rather *how may we* surely and speedily overcome and extinguish the single popular reproach incurred by us.

Fortunately, the present phase of therapeutics is one of transition from an empiric art, where mere clinical deductions had placed it, to that of an established science, to which it is steadily being elevated by the incessant labors of the physiologist, bio-chemist, microscopist, and of the bacteriologist. Enough has already been accomplished by them to assure us that rational medication is in sight, as, one by one, each drug in the catalogue shall have assigned to it a definite and well-ascertained physiologic force, as manifest in general effect, or by affinity for certain of the vital organs and tissues of the body. Future therapeutics is, therefore, to develop and complete a method already commenced, and will solve the several important problems suggested by our present method. Instead of crudities, perfect medicines are to be employed, and these must possess the essential qualities: purity, precise division, accurate dosage in the minutest bulk, uniform power, ready solubility, permanent form, and not be repulsive to sight, taste, or smell. With all our skill in formulating, together with that of the apothecary in preparing, especially of Galenic drugs, we cannot approach the standard indicated so long as we are compelled to draw our medicinal resources from the present officinal list; but that standard is nevertheless readily attainable, although we must give the credit of showing us the way to the extremes of nihilism, and the highest potencies in medicine.

It is more than probable that homeopathy and scientific medicine are approaching on converging lines a common ground, since on the one side there is to be seen a continuous, but stealthy advance from original nihilism, to really potent medication, while on the other there is an irrepressible progression toward the adoption of a therapeutic method that shall be at once effective and palatable.

With the absurd dogma of *similia similibus curantur*, coupled with the equally absurd assertion of the increased power of attenuations and dilutions of the thirtieth degree and upward, as formulated by Hahnemann, his system certainly suggested the practicability of exhibiting only the ultimate active principles of the botanic drugs, and reducing the inorganic bodies to a state of absolute purity.

We may well accept the method of alkaloidal and pure chemic medicines, as devised by the learned Dr. Burgraeve, as offering the best way of administering potent medicine in an agreeable form, and capable of producing certain and uniform effects. By this method alone may we overcome popular dislike to officinal medicaments, since all these may be administered in the form of tasteless granules.

Burgraeve's concentrated medicines have been in constant use for more than twenty years, and seem now to be growing in favor more rapidly than ever before. Several of our leading pharmacists, appreciating the great importance of such products, have already placed on the market a number of concentrations or alkaloids, which are steadily gaining the approval of physicians. They are offered in different forms, as tablets, granules, and solutions. Whenever pharmacists shall produce these substances in absolute purity, and all in the granule form, we will have attained a position reconciling, for all time to come, the public with therapeutic medicine.

Very few physicians are sufficiently familiar with chemic reactions to recognize the many changes occurring in crude medicines, imparting to their therapeutic effects such variableness as to render them uncertain, and, therefore, unreliable. For this reason, if no others were apparent, polypharmacy may well be abandoned in favor of a method possessing the inestimable advantages of alkaloid medication.

Of the many decided advantages of active-principle medication over other forms a few may be mentioned. Presented in the form of granules, the therapeutic effects of which are ascertained, the dosage is accurate, minute, and the effects constant, all of which are known to the prescriber, who may with confidence exhibit them even to little children, who will take them without dislike. In this form, medicines will be supplied—although they have not yet been brought fully up to the standard that we should require—equal to all demands and from pharmacies unsurpassed anywhere.

When it is considered that the number of medicines habitually prescribed by the general practi-

tioner is probably covered by the figure fifty, and certainly by one hundred, it is evident that the physician in remote parts of the country may carry a full armamentarium in a cabinet occupying little more space in the office than an amputating-case. The saddle-bags or buggy-case will readily contain a supply and assortment sufficient to meet the demands of his daily rounds, while the dispensing may be done without labor and loss of valuable time. The city physician, as well, may find his business greatly facilitated by carrying with him a case filled with these preparations, which he may dispense in less time than would be consumed in writing a prescription, with the necessary directions. He will also prevent substitution, adulteration, and repetition by others. It may be objected that we sometimes desire the effects of the whole plant, but there are few plants that, like those from which opium and quinine are derived, contain more than one active alkaloid, and the exceptions are few in which the one alkaloid does not truly represent the entire plant. These alkaloids, being capable of perfect chemic separation and exact assay, must afford an accurate measure of uniform physiologic power unobtainable by other means.

Here, then, on the ground where the two therapeutic extremes meet, scientific medicine is to stand, with all of the potent remedies that may be required at hand, and in a form acceptable to the most sensitive palate.

Besides the improvements made and others rapidly to follow in the preparation and exhibition of medicines, there are other and novel aspects from which future therapeutics may be contemplated. One is the practicability of forcing substantial medicines through the skin by means of the electric current—as, for instance, the introduction of iodine into a goitrous tumor. It is to be expected that an extended application of this method to other agents will follow.

Another, and it may be of the greatest possible value, is that which, accepting at its true worth the germ-origin of disease, seeks to repel or neutralize microörganisms by natural as well as by artificial antidotes. It has been clearly established that not the mere presence of a brood of microphytes within the body, which is a constant fact of animal life, but the toxic product generated by the parasites, is the actual exciting cause of disease. Moreover, recent bio-chemic researches have discovered the constant presence in the liquor sanguinis of a chemic agent or agents generated within the organism, and endowed with alexiteric and antidotal powers. These chemic substances are believed to be capable of actively resisting, neutralizing, and expelling poisonous matter introduced from without or fabricated within the body. For example, the specific poison pneumotoxin is always present in pneumonia until the crisis is reached, when, in favorable cases, the antidote named *anti-pneumotoxin* appearing, the poison diminishes rapidly in proportion to the development of its antagonist. This power of the living animal laboratory may yet define, if, indeed, it has not already done so, the *vis medicatrix naturæ* and justify a theory universally held half a century ago, and still avowed by not a few, that disease-processes are governed in their origin, progress, and termination, by invariable natural laws, and therefore all acute diseases being self-limited, medical art is wholly incompetent to subjugate them, or even to shorten their term of existence.

But the practice based upon that theory, that *vis medicatrix naturæ* should not be interfered with at all by active antidotal treatment, but that an expectant or negative plan only is admissible, cannot in the light of present knowledge be approved. Subject alone to natural laws, many cases of acute disease doubtless are and may be successfully resisted by the unaided organism, but who of us would consent to be an idle spectator of such a contest. Until we shall have acquired the necessary skill and method of correctly computing in any given case the relative antidotal energy of the organism to the virulence of the disease present, we cannot refuse to oppose or attack the noxious enemy. That a process by which the resisting power of the body to toxic influences may be estimated will be devised the recent brilliant triumphs of chemic physiology foreshadows, as only a matter of time not very distant for its verification. Not only has bio-chemistry already furnished the means for placing a limitation on the ravages of some of the more intensely contagious diseases, by successfully opposing or modifying and even preventing them, and also of a few that are not contagious, it is not anticipating too much to expect other results quite as marvellous to follow. In cases in which the organism is unprotected, or has failed to develop in due time the appropriate antitoxic material, thereby allowing disease to gain a lodgment within it, the deficiency will be supplied from artificial sources, always at our command. It is, therefore, quite apparent that in addition to the absolutely pure medicaments that are to be found only in the alkaloids and carefully assayed glucosides and metalloids, future therapeutics will also enjoin the general use of attenuated virus by inoculation. From these two sources are to be derived in future the most efficient measures with which to prevent, oppose, or modify all morbid operations. Steadily advancing and establishing the fixed invariable vital properties, general and specific, of individual drugs, this necessary work will not cease until the

entire catalogue of materia medica has been subjected to the crucial tests of bio-chemistry, and correctly classified and valued according to physiologic law.

Medical therapeutics represented by granules containing only the active principle of drugs, the definite vital force and direction of each being well ascertained, we may oppose disease with an intelligent simplicity or a very narrow combination of remedies. Such medicaments, together with appropriate attenuated virus, electricity more generally applied, and the development of the essential chemic agents to supply the organism with when defective or insufficient antidotal substances seem apparent, are to constitute the chief measures of the future. Prospective therapeutics therefore, starting with this, the brightest and best decade in medical history, is to place medicine immovably on the rock of public confidence. This done, the warfare with professional heresies is ended and the victory is ours, and its fruits must endnre while time shall last.

Summarized, the foregoing leads to these conclusions: Materia medica is burdened with a great mass of useless matter that may well be expunged; while that retained, from which we must derive our medicinal measures, is extremely offensive to those to whom we minister—the repulsive qualities of our medicines constitute the sole cause of disaffection and the estrangement of so many from us. It is incumbent upon us to overcome this objection, as so earnestly and justly demanded by our patrons; this can be achieved alone by the general employment of the pure alkaloids, glucosides, and metalloids. Future therapeutics is to rest upon the use of these substances, and to develop a systematized method of applying attenuated virus and electricity.

A thorough knowledge of the chemic elements of the animal organism now being acquired is to suggest and make practicable the use of these substances in neutralizing and modifying disease processes and supplying the body with such as it may be deficient in.

FISTULA IN ANO.[1]

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FISTULA in ano is a very common affection, and one that in many cases may be prevented, if the patient will seek advice early and if the surgeon will act boldly and without delay. By far the larger number of cases commence with an abscess, either superficial or deeply situated in the ischio-rectal fossa. These deep abscesses are far the most serious, and, if not properly opened and drained, the pus is certain to burrow along the fascia and to burst into the rectum, as well as externally, making a deep fistula. With almost any abscess this may be prevented if the surgeon will avoid temporizing and poulticing as is very commonly done, and, instead, open the abscess freely, laying it open from end to end, preferably in a line radiating from the anus. The loculi in a large abscess should be thoroughly broken down, the wound irrigated, and the cavity lightly packed, not stuffed, with gauze, and thereby thoroughly drained. Hot aseptic poultices are useful until the acute inflammation has subsided.

If abscesses are treated in this way, fistula will very rarely occur; but, unfortunately, many patients do not seek advice in time, and too often the surgeon does not use the knife early enough, or freely enough, to obtain the best results. Deeply-seated fluctuation is often difficult to recognize, but it is far better to incise a hard, brawny, inflamed buttock before much pus has formed, than to delay a day after it has begun to break down, as these abscesses often extend and burrow very rapidly.

Fistula sometimes originates within the rectum from perforation of the mucous membrane by ulceration or traumatism. It is one of the several dangers of the injection of hemorrhoids with carbolic acid.

In examining a patient for fistula, he should lie on the side on which the fistula is, on a hard couch or table, exposed to a good light. The external opening is usually easily seen, but sometimes it is very small, and can only be detected by careful search, and by pressing with the fingers outward along the indurated track, so that a drop of pus may be made to exude from the orifice. The track can usually be closely followed by the induration along it, which feels like a wire under the skin, and often extends beyond the opening. A probe passed in at the opening will, if not too large, follow the track along the line of induration into the bowel in a simple case, and may then be felt there on the introduction of the finger, but if the track is tortuous this usually cannot be done, and the internal opening must be otherwise sought for.

If the fistula is found to extend to the mucous membrane, or even to the sphincter, an internal opening will almost always exist, though it may not be found, either at the time of examination or during operation; and if it does exist, and is not found, the operation will probably fail to cure.

Mr. Goodsall has pointed out that when the track of a fistula runs posteriorly to a line bisecting the anus laterally, it will usually be found to enter the rectum in the median line, directly posteriorly, and

[1] Read before the Denver and Arapahoe Medical Society, March 22, 1892.

very frequently between the two sphincters. If, however, it is all anterior to this line, it is more frequently a straight track, entering the bowel directly opposite the external opening.

The internal opening may be large and ragged, in which case there will usually be great pain, and it can easily be felt by the finger in the bowel. More often it is quite small, and feels like a minute dimple, or is elevated above the surface, pouting and soft, feeling very much like a gumboil. This pouting condition is often seen in the external openings of old fistulæ, and the pus exuding from them is thin and watery, with curdy flakes in it. Such a fistula may, if necessary, be left without operation for a time, as it is nearly quiescent, and the pus is not likely to burrow, and make new tracks, unless from some cause it should become inflamed, when the character of the pus will change, become more yellow, and more like the miscalled "laudable pus."

Any fistula is liable to extend and get worse from temporary obstruction of the external opening and the consequent retention of the discharge. Inflammation ensues and burrowing in any direction with formation of more sinuses may result.

The sooner a fistula is operated upon the better, unless it be in a state of acute inflammation. In this case the external opening should be dilated, the patient confined to a recumbent position and hot poultices applied until the inflammation has subsided.

There are a few cardinal rules to be observed in operating:

1. Only one division of the sphincters must be made, and that at right angles to the muscular fibers, and, if possible, the whole of both sphincters should not be divided, or incontinence is very likely to result. When there are two internal openings, it is better to lay open all communicating tracks *up to* the second opening in the bowel, but not to divide the sphincter more than once. If a cure is not obtained by one operation, a second one may be done later, with less danger of incontinence.

2. All tracks must be carefully laid open wherever they go and made to heal from the bottom, the tracks being followed in all their deviations. Exceptions to this rule must be made only in very long, deep fistulæ, opening externally at a great distance from the anus. In such a case an opening should be made in the track near the anus, the proximal portion, including the sphincter, laid open, and the distal portion curetted with a sharp spoon throughout its entire length, rendered aseptic by injections and stimulated to granulation.

3. All undermined and overhanging skin and fat should be freely removed, especially where the skin is thin and livid and lacking in vitality. Granulation goes on much more rapidly if this is done, and the subsequent contraction is less rather than greater.

4. Never make an opening into the bowel, as is advised by many older writers, unless you are absolutely certain that one does not exist. If there is none, it may be possible to cure the case without dividing the sphincter.

5. Tracks running up the rectum, under the mucous membrane, should be laid open as high as they extend. Authors differ on this point, but there is little or no danger in doing it, as hemorrhage can always be controlled if proper means are taken, and the fistula may not be cured if it is omitted.

After the incisions are made, and all the tracks are laid open, I usually scrape away the glistening lining membrane with the sharp spoon. If there is much induration, it is well to make an incision from one-eighth to one-fourth of an inch deep along the track. This is the well-known "back-cut" of the late Mr. Salmon, of London, and wonderfully promotes healing.

With strong, healthy patients there is little danger of cutting too much; in fact, the more you cut the better they seem to do, but with weak, delicate patients, especially with a tendency to pulmonary tuberculosis, or any chronic disease, one must cut as little as possible. This is especially necessary in women, where the sinuses run toward the perineum, as in them the dependence of the sphincter ani upon the sphincter vaginæ must always be remembered with a view of avoiding incontinence when the wounds heal.

In these cases it is, I think, frequently better to attempt immediate closure of the wound by deep sutures passing clear round the sinus, after it has been scraped out and disinfected. If this is to be attempted, the sphincters should be well dilated before incising, so as to insure temporary rest. A careful daily watch must be maintained, and, if pus appears, the sutures should at once be removed, the wound reopened and allowed to heal from the bottom by granulation in the usual way.

Healing by immediate closure may frequently be obtained when there is a single straight track, if the lining membrane and weak granulations in the sinus are thoroughly curetted away, and, if successful, much time will be saved; but if the operation be more extensive, and any lateral sinuses have to be laid open, it will usually fail. Time may be saved when there is a deep incision, leaving a large gap to be filled by granulation, by putting in a few deep sutures, but leaving them untied until granulation has begun, and then partially drawing the sides together, so as to narrow the gap, but not to close it.

After operating I pack the wound carefully with cotton to control the bleeding, and apply an ex-

ternal pad and T-bandage, and encourage suppuration and discharge by means of hot fomentations or poultices about the second or third day, if there is any inflammation. The bowels should be confined until about the fourth day, when a gentle but efficient purge will bring away everything, packing and all, as it will by then have become loosened by the discharges.

It is important, as the wound heals, to pass the finger or probe along its base daily, to break down any bridges that may form, so as to insure its healing from the bottom and to keep it clean. Much judgment is often required in the choice of local applications—sedative, stimulant, or caustic, or a simple bit of lint or gauze, to keep the lips apart. The surgeon must decide on the general treatment of each case on its requirements, and judge when to give stimulants, tonics or purgatives, a full diet or a light one, how long the patient should be confined to bed, etc.

We frequently hear of failure to cure fistula. This is sometimes due to a want of attention to the after-treatment. The wounds have a constant tendency to bridge over, leaving a fistula below, which does not heal and eventually breaks out again. A more common cause of failure is that the internal opening is not found and, therefore, not laid open, or that a small lateral sinus escapes the operator's notice, and he omits to cut it. During the healing of the wound pus must be carefully watched for, and, if more is found than should naturally arise from the granulating surfaces, its source must be ascertained. Some unsuspected sinus, either originally overlooked or in process of formation, is probably the seat of the mischief, and should be slit open at once. If everything is not laid open, failure must result.

Although an operation is indicated in most fistulæ, it is not always so. Some patients decline it, and demand that milder measures be tried. In others, the general state of health prohibits. I shall not now discuss the vexed question of curing fistula accompanying pulmonary tuberculosis, further than to say that, in my opinion, no operation should be undertaken while the lung-disease is at all active, and as long as there are any moist râles to be heard in the lungs. A cough is a decided contra-indication to operation; the succussion gives both pain and delays, sometimes prevents healing. When fistula complicates stricture of the rectum it is quite useless to touch the fistula without previously dilating or dividing the stricture. Kidney-disease puts any operation out of the question, and a man with an enlarged prostate is always a bad subject for rectal operations. Many patients, again, cannot, or will not, afford the time to lie up for the three or six weeks necessary for a cure of a deep fistula.

Fistula has been cured by the irritation caused by passing a probe into it, and sometimes irritating injections set up just the necessary degree of adhesive inflammation to cure, but such cases are extremely rare, and the treatment not at all to be depended upon. Moreover, fistulæ so cured are prone to break down and reopen. Still, such injections may be tried when an operation cannot be done, but should be preceded by forcible dilatation of the sphincters to give the part temporary rest, and, if possible, by curetting the internal surface of the sinus.

When purely palliative treatment is required, the patient must be kept as comfortable as possible, by careful regulation of the bowels, and by keeping the external opening free, to allow the discharge to escape easily. Dilatation by tents, or the insertion of a small drainage-tube, may be necessary to effect this. Allingham advises the use of a bone collar-stud, with a hole drilled through it, slipped into the orifice to keep it open. The parts must be kept clean and dry, and gauze or cotton used to absorb the discharge. A hot linseed-meal poultice, applied every night at bedtime, is very soothing; it allays inflammation and prevents retention of pus (which always gives pain) by promoting a free discharge.

LECTURES VERSUS RECITATIONS IN MEDICAL COLLEGES.

BY HENRY BIXBY HEMENWAY, A.M., M.D.,
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ACCORDING to an ancient custom, adopted in every regular and well-governed college for medical instruction in this country, most of the didactic teaching is by lectures. Is it wise to adhere to the old system? The lecture was originally the means used for all education. With the progress in the art of printing, and with the advances made in the science of pedagogy in non-professional schools, the lecture has largely given place to the use of text-books. Even in some professional schools—theologic, for example—the lecture is of far less importance than the daily examination from a prescribed text-book. Is it not strange that the disciples of Æsculapius so long continue to use his methods of instruction?

In favor of the lecture-system it must be admitted that when the professor can speak at all fluently, he can make a good impression with less study. He can cover up his own lack of reading, and with a very superficial knowledge of his subject occupy his hour in a pleasing manner. Some time since I heard a didactic lecture upon a subject in materia medica. The speaker spoke easily and occupied his entire time, but he said practically nothing. He told the origin of the drug, and the fact that it had

been used in medicine from very early times. He did not tell the composition, method of preparation, dose, or exact physiologic action. He did give a few of the gross effects of the drug, and named some diseases in which it is used, but failed to give the exact indications for its administration. It would be unjust to regard such teaching as representative of the work of our schools, but similar lectures are given more or less frequently in most of them.

When we say that the lecture was the original form of instruction, we do not necessarily mean that questions were excluded, as they are in modern lectures. On the contrary, that prince of teachers, Socrates, made his lectures far more interesting and effective by frequent interrogations.

It has been claimed for the pure lecture-system that it gives a better opportunity for the teacher to impress his individuality upon the student, but I feel that this is not the truth. The lecturer gives his ideas, and the student absorbs what he can, but is not prepared to recognize what ideas are original. Everyone who has a broad acquaintance with the professional schools must recognize the fact that the best students come, as a rule, from those institutions in which the quiz is a special feature; and, probably, he will further note that he remembers most vividly the instructions received from his quiz-master.

The lecture-system tends to narrow the student's mind. The student rarely knows of what the next lecture is to treat, and so cannot, if he would, look up the ideas of others. After the lecture he is inclined to learn all that he can of the professor's lecture, rather than to spend his time in reading his text-books. In fact, some professors give their students to distinctly understand that they must take their professor's ideas, and not those of other authorities. It is only a small man who would thus give his *ipse dixit*.

It frequently happens that a lecturer is misunderstood, when both the speaker and the hearer suppose that there is a perfect understanding. The error is seldom discovered except by the quiz.

The present method does not at all prepare the student for his life-work. He may practically go to sleep while listening to a dull lecture, or he may be spell-bound by the eloquent speaker. At best, there is a decided feeling of exhaustion after listening to lectures for a few weeks. Original thought or reasoning is reduced to a minimum.

Against the quiz method of instruction it is often urged that it takes too long to get around a large class to devote much time to that method. True it does take time, but, so far as I know, in our professional schools the quiz is not generally utilized in the most profitable manner. A few hurried questions are occasionally asked in regard to the subject of past lectures only.

I would suggest that in our didactic teaching the text-book be more generally used. I remember having provided myself, during my first year at college, with several text-books recommended in the catalogue. In pathology, for example, it was so absolutely impossible to follow the professor with the text-book that the student has never yet been able to wade through the pages of his German author. Having been unable to comprehend the work when studying the subject, he is now afflicted with mental dyspepsia and nausea whenever he reads a few pages of that particular book. The teacher should be a leader, or he is a crammer instead of an educator. He should instruct the student how to read. A poor book as a text, thoroughly mastered, is far better than a good book glanced at. When one text-book on a subject is understood by the student, others can be more easily comprehended.

What is the object of the ordinary lecture on anatomy? It is practically only a recital of a few pages from Gray, and generally less accurate. In histology, chemistry, anatomy, and to some degree in pathology and materia medica, the most profitable work can be done in the laboratory. The student will learn more in less time, and with less fatigue. In other cases, even including as far as possible clinical teaching, an assigned lesson should be given out beforehand. As far as possible, the teacher should make his remarks explanatory and supplementary to the answers of the students. In that way the student is practically obliged to study, and he soon learns to read different authors with discrimination.

If it is a fact that the student remembers most vividly the instructions in the quiz-class; if in the quiz-class the student can most clearly comprehend the ideas of the teacher, is it not a foolish custom to assign the quiz-classes to assistants, sometimes undergraduates. There was a time when the primary school was assigned to the poorest teacher. To-day the best school-boards regard the primary teacher's place as the most difficult to fill. It is to be hoped that a like change will soon be noticed in the general opinion relative to the quiz-master.

He who is fit to enter a medical school should be treated as a man, and not as a sponge. We might learn a lesson at the soda-fountain. In charging the water with carbonic acid gas, high pressure (eminent professors) is not sufficient. A little agitation (quizzing) will cause the water (the student) to absorb many times as much of the gas (instruction).

We would not entirely abolish the lecture-system, but rather revive the method of Socrates, and adapt it to the present time. By the use of text-books

the student may be prepared for the questioner, and the lecture should be limited to discussing with the class disputed points, or emphasizing important subjects.

ANALYTIC NOTES ON COMMERCIAL COD-LIVER OIL EMULSIONS.

BY HENRY LEFFMANN, M.D.,
AND
WILLIAM BEAM, M.D.,
OF PHILADELPHIA.

THE excellence of an emulsion of cod-liver oil depends, of course, upon the proportion of oil present and upon the perfection of the emulsification. The latter condition may be roughly estimated by the facility with which the oil separates on standing, but the proportion present can only be determined by analytic methods. Since these preparations are extensively employed by physicians, it seemed to be of interest to determine the strength of commercial varieties, some of which make definite claims as to quality. The analytic investigations here noted were carried out by the most approved methods for fat-extraction, as applied in milk-analysis. The samples were obtained from a wholesale house and in the original packages. Care was taken to mix each sample thoroughly before making the analysis.

Brand.	Per cent. of oil claimed.	Per cent. of oil found (by volume).	Remarks.
"Williams's emulsion of cod-liver oil with hypophosphite of lime."	50	49.9	
"Phillips's palatable emulsion of cod-liver oil."	50	49.5	Pancreatized.
"Scott's emulsion of pure cod-liver oil."	50	49.5	
"Hydroleine."	66.6	44.2	Pancreatized; contains salicylic alcohol.
"Maltine with cod-liver oil."	30	35.9	Much maltose.
"Baker's emulson of cod-liver oil with hypophosphites.	50	10.7	
" (second sample.)	50	18.0	
"Baker's pure cod-liver oil with extract of malt."	....	8.4	Much maltose.
"Wilber's pure cod-liver oil and phosphates."	....	37 3	
"Wampole's perfected and tasteless preparation of cod-liver oil."	"the curative agents from 25 per cent. pure Norwegian cod-liver oil."	None.	14 per cent. alcohol.

The sample (Wampole's) last-named is accompanied by a circular stating that "the oil in this preparation is in positive solution," and also a certificate from a professional chemist to the following effect: "I have examined the sample which you sent me, marked Wampole's perfected and tasteless solution containing the essential curative agents of cod-liver oil, and I find that it contains combined phosphorus in several forms, and the peculiar principles of wild cherry bark, and it also carries an amount of combined iodine, such as is found in a volume of cod-liver oil equal to 25 per cent. of the solution; that is, one tablespoonful of the mixture carries the amount of combined iodine found in a teaspoonful of cod-liver oil." The sample analyzed by us contains 14 per cent. of alcohol and no appreciable amount of iodine.

It is not inopportune to discuss briefly some of the chemical questions relating to the therapeutic value of cod-liver oil. It is probable that the modern knowledge of causation and nature of phthisis, recognizing it as definitely due to a specific germ, will modify materially the therapeutic importance of such a substance as cod-liver oil, but incidental to the supposed especial nourishing function of the fatty matter, it has often been suggested that some accessory ingredients may be of value.

For instance, iodine has often received credit, but it has been known for a long time that the proportion of this element is extremely minute, ranging from 0.001 to 0.004 per cent. It is evidently impossible to attribute the medicinal value of the oil to the traces of iodine present, unless we are willing to accept the absurd doctrine of infinitesimals. The proportion of iodine in dried cod-fish and in herring, is considerably greater than in the oil.

Theoretic considerations would lead to the view that the best emulsions are those made with pancreatin, in association with the least possible quantity of gum, glycerol, or sugar. The presence of any considerable amount of the more easily fermentable sugars, such as maltose or glucose must be regarded as objectionable. The presence of salicylic acid and of notable proportions of alcohol will be still more serious, for, as we have elsewhere shown, the former interferes decidedly with the action of the pancreatic ferment, and the latter should certainly not be employed except under specific and regulated conditions of dosage. Thus "hydroleine," an otherwise satisfactory emulsion (although not found to contain the amount of oil indicated in the published formula), is objectionable from the presence of salicylic acid, and in the Wampole preparation we have, in addition to the fact that it contains no appreciable amount of oil, the presence of 14 per cent. of alcohol as a most serious drawback to its use.

Dr. Benjamin Lee has been elected professor of Orthopedics at the Philadelphia Polyclinic.

WILL THE GENERAL PRACTITIONER CEASE TO EXIST, AND HIS PLACE BE TAKEN BY SPECIALISTS?

By JOHN GRAHAM, M.D.,
of Philadelphia.

In language written and spoken, we are forcibly informed that this is an age of progress; that old things must give way to new; and that the relentless scythe of Time will hew down everything unsuited to this advanced and advancing age.

Among the many early doomed to extinction, according to some writers and teachers, is a class endeared to all through the memory of bygone days—the general practitioner, the family physician. We are told that he must go, and his place be filled by the specialist.

Some kindly describe him to us. He is always short, very stout, a little past middle life, and wears spectacles. His resources to battle with disease, generally speaking, consist of bleeding, blisters, quinine, and calomel, with an occasional dose of salts. The humorous journals assist in diffusing a knowledge of him.

If this description is a correct one as he at present exists, then, indeed, he must go, for he is no longer suited to his environment; but, as a matter of fact, the good-natured old doctor here described has long since almost disappeared. Like the partridge of Pennsylvania, he exists only in small numbers, in the mountain districts; but his improved type—the practitioner of to-day—holds his place by merit, in this and in every other civilized land, and is here to stay.

Year by year the study of medicine covers a wider field, until now no mind is broad enough, or working life long enough, to enable one to become an expert in all its branches. But, as an army needs a general to guide and direct it; to be thoroughly conversant with the art of war, in all its details; capable of knowing and selecting a good engineer, artillery officer, commissary-general, or corps-commander, and assigning the right man to the right place; so in our battle with the enemy—disease—we need a commander to guide and direct: a man with a broad knowledge of general medicine, and thoroughly posted, by bedside experience, in all its branches. There are plenty of such men, and the wise patient will seek the advice of such first, and, if a specialist is needed, will depend upon the family physician to make the selection.

If my judgment—gained by a somewhat large experience—is correct, the majority of cases, as they come to us, can be best treated by the general practitioner; the minority alone can with advantage be assigned to the specialist.

Most diseases have complications. The patient depressed by a uterine catarrh may, as a result of indiscreet exposure, develop a solidified lung.. A pelvic inflammation, as in a case I recently saw, may be but a complication of typhoid fever. Here, a single visit from the specialist is all that is probably necessary. The case will be best managed by the general practitioner.

The advertising quack will not agree with me. His advice is: "Shun the family doctor; come to a specialist—me." How many poor invalids would have saved time, money, and health by having come to the physician first, to have been guided by his counsel. The general public, even when educated, is alone utterly unable to make a proper selection; and, as a matter of fact, the office of the quack is filled with lawyers, clergymen, and men who know everything except medicine.

Our first-class medical colleges graduate yearly hundreds of young men and send them forth thoroughly prepared in all departments of medicine and lacking only experience to enable them to become first-class general practitioners; but, alas, the educated man too often shrinks from physical toil, and the young physician is not attracted to general practice, with its long hours of labor and sacrifice of social pleasures.

The brilliant results recently accomplished in some departments of medicine, notably in gynecology, with the large fees and shorter hours of work naturally attract the young graduate. So great is this tendency that what would ordinarily be for the good and the development of the profession has degenerated into an evil; the specialties more than general practice are becoming overstocked.

No man should embark in a specialty until he has practised medicine for five or six years. He should learn by experience not what branch he likes, but that which he is best adapted to.

I recently heard a teacher say to a mother: "Your son is bright, studies easily, and is industrious, but cannot use his hands." Such a boy might in after-years be successful in the treatment of nervous diseases, but what a failure he would make as a surgeon.

In regard to the gynecologists, I have always thought that their ranks should be filled, not by general practitioners, but by young surgeons—young men thoroughly grounded in the theory and practice of general surgery.

A man of moderate ability, industrious, and conscientious, may lead a useful life as a general practitioner, and will be fairly remunerated for his services; but a specialist with only moderate ability in his branch will be a gloomy failure.

Wilhelm Czermak has been made professor extraordinary of Ophthalmology at the University of Innsbruck.

MEDICAL PROGRESS.

Extra-genital Syphilitic Infection.—The primary lesion of syphilis may be genital; peri-genital, in the genito-crural folds, on the symphysis, in the inguinal regions, on the perineum, on the inner surface of the thighs, in the anal region; or extra-genital, on the skin or mucous membranes remote from the genital region.

During ten years, NEUMANN (*Bericht des k.-k. allgemeinen Krankenhauses für das Jahr* 1890) has observed eighty-eight cases of extra-genital chancre—thirty-seven in males and fifty-one in females. In eighteen cases—six in males and twelve in females—the upper lip was the seat of the lesion. The infection was usually transmitted by kissing. In one case the transmission was by drinking from a glass previously used by a syphilitic; in another case, by a bite; in one case, by the sucking of the lip of the grandmother by a child of a syphilitic father, the mother, who had nursed the child, escaping In twenty-eight cases—nine in males and nineteen in females—the lower lip was the seat of primary lesion. Among the modes of conveyance were kissing and the use in common of eating utensils. In eight cases—six in males and two in females—chancres appeared at the angle of the mouth. In one case, the infection was ascribed to smoking a thrown-away cigar. In two cases, chancres appeared upon the cheek—in one case in a man, in the other in a woman. In the latter the infection was conveyed by kissing. In five cases—four in males and one in a female—the primary lesion appeared upon the chin. The four men were infected through shaving. A male presented a chancre of the posterior wall of the pharynx and of the left palatine arch. The mode of infection was not determinable. Two women presented chancres of the tonsils. One was infected by a spoon. Chancres appeared on the alæ nasi in three cases—two in males and one in a female. In the last, the infection was conveyed by scratching the excoriated nose with the finger-nail, after cleansing a vessel in which a syphilitic had bathed. Two men presented chancres of the eyelids. The fingers and hands were the seat of infection in eleven cases—six in men and five in women. Among the modes of transmission were washing infected linen and a bite. Four chancres were found upon the nipples in women. In two instances, the infection was conveyed by syphilitic infants; in one, by a bite; in one, by the kiss of a syphilitic man. A child presented a chancre of the umbilicus. The mother had been infected in the eighth month of pregnancy. The child had no evidences of infection at birth, but when five months old was infected by the secretion from the papules of the mother. Three women presented chancres of the anus.—*Internationale klinische Rundschau*, 1892, No. 15, p. 603.

Acute Bulbar Palsy of Inflammatory Origin.—VANDERVELDE (*Journal de Médecine, de Chirurgie, et de Pharmacologie*, 1892, No. 14, p. 225) has recorded the case of a man, twenty-four years old, with a history of alcoholism but not of syphilis, who three weeks previously to coming under observation had complained of sore-throat. Twelve days later the difficulty was worse and fever was present. It became necessary to introduce nourishment by means of an esophageal tube. In three days more, tingling had appeared in the lower extremities, with increasing difficulty of progression. Mild attacks of headache, of brief duration, occurred. For several days there had been no sleep. Attempts to arise from bed induced vertigo. There was ringing in the ears. Vision had been impaired for two weeks. The pupils were dilated and unequal; the right was larger than the left; both were sensitive to light. There was bilateral convergent strabismus; the deviation was at first the greater on the right; subsequently it became the more decided on the left. The difficulty of deglutition increased. The uvula was deviated to the right; the velum palati to the left. The mobility of the tongue was unimpaired. The lines of the lower part of the face were obliterated. The nose was drawn to the right. The movements of the extremities were preserved. In walking, the feet were separated; the right leg was dragged; there was a tendency to fall to the right. The mental condition prevented a study of the knee-jerks; later, the right knee-jerk was elicited; there was no ankle-clonus; the cremasteric reflex was preserved; the superficial reflexes were preserved, but enfeebled. The muscular power of the hands, as measured by the dynamometer, was diminished, but alike on both sides. The electric reactions were preserved. The pulse was 140; the respiration 40; the temperature 101.8°. The bowels were constipated. The urine contained neither albumin nor sugar. The condition of the patient steadily grew worse. Dyspnea, cyanosis, convulsions, and coma were followed by death. At the autopsy, inflammation of the ganglion-cells in the anterior horns of the medulla oblongata was found at the level of the decussation of the pyramids. There was slight contiguous involvement of the gray matter of the posterior horns and also evidences of beginning descending degeneration.

The Bacillus of Measles.—CANON and PIELICKE (*Berliner klin. Wochenschr.*, 1892, No. 16, p. 378) examined the blood in fourteen cases of measles, in cover-glass preparations stained with methylene-blue and eosin, and found constantly one kind of bacillus. The organisms were at times uniformly stained; at other times they were more deeply stained at the extremities. They were of variable size; some appeared like diplococci; others were as long as the radius, and still others as long as the diameter of a red blood-corpuscle. In the cover-glass preparations, the bacilli were arranged singly and in groups, with a tendency to lie parallel with one another. The organisms were found throughout the whole course of the disease—in one case, in fact, for three days after defervescence had taken place. They appeared in largest number at the period of crisis. In seven children just recovering from measles, and in one fatal case of uncomplicated measles examined ten hours after death, bacilli could not be found in the blood. The bacilli did not retain the stain of Gram's method. Bacilli resembling those found in the blood were present in the sputum and in the nasal and conjunctival secretion of children with measles. Inoculations of the blood upon glycerin-agar, blood-serum, or human milk, remained sterile. In three cases, inoculations upon bouillon were followed by the development of a bacillus resembling that found in the blood.

The Blood during Treatment with Tuberculin.—In a study of the blood of tuberculous patients being treated with tuberculin, BOTKIN (*Deutsche med. Wochenschr.*, No. 15, 1892, p. 321) found that after the injections an acute leukocytosis became evident, all varieties of the white cells being increased. On the day after the reaction, the number of leukocytes rapidly diminished, the majority probably undergoing destruction, as indicated by an increased number of blood-plaques. This manifestation was usually simultaneous with the maximum decline of temperature usually observed to follow the reaction. The condition is comparable with the blood-crisis of some of the acute infectious diseases that are attended with fever. The changes in the blood may take place in cases in which the temperature does not rise. The increase in the number of eosinophile cells may occur in conjunction not only with chronic cutaneous affections but also with acute transitory exanthems that complicate some therapeutic procedures.

THERAPEUTIC NOTES.

The Treatment of Metrorrhagia.—EDIS (*British Medical Journal*, No. 1630, p. 648) considers the various conditions that give rise to metrorrhagia, and indicates the best means of treatment. When uterine hemorrhage results from constitutional or general conditions, its repression is not always wise. In certain cases of heart-disease moderate uterine hemorrhage seems to relieve the cardiac symptoms. In such cases potassium bromide, with strophanthus, digitalis, or aconite, is indicated. Iron is also useful. If the function of the liver be deranged, attention to diet, abstention from alcohol, encouraging the action of the skin and the administration of a few grains of calomel, followed in the early morning by a brisk saline aperient, will be attended with good results. If disease of the kidneys exists, vicarious action of the skin and bowels, by means of diaphoretics and purgatives, should be encouraged. The reliable remedies available for controlling uterine hemorrhage are few in number. Ergot is one of the most potent; its efficacy is increased by combination with strychnine and cinchona. Hydrastis canadensis is a valuable agent in many cases of uterine fibroid. Hamamelis is useful in some cases. Ordinary astringents, such as gallic and sulphuric acids, have little influence in restraining hemorrhage. Quinine and strychnine, alone or in combination, will often succeed in controlling hemorrhage when the system is depressed, as a result of repeated or protracted loss of blood. Potassium bromide is one of the best remedies in cases of hemorrhagic chlorosis, ovarian irritation, or hematocele. Potassium chlorate and borax, in combination with ergot and cannabis indica, have been recommended. When the hemorrhage has been severe or protracted, opium has a wonderful restorative effect. Combination with quinine or cinchona seems to enhance the value of the remedy. Iron should not be resorted to when the presence of a foreign body in the cavity of the uterus is suspected. On the other hand, when from antecedent anemia, the blood has become so attenuated as to pass readily through the capillaries, and in some cases of intra-mural fibroids, iron does much good. Locally, the hot vaginal douche, at a temperature of from 110° to 115° F., is often of service. In all severe cases absolute rest in the horizontal position, preferably in bed, is indicated. The application of carbolic acid by means of a suitable probe to the cervical canal and even to the cavity of the uterus may, in appropriate cases, control the hemorrhage for a time. Free scarification of the cervix, by relieving congestion, sometimes succeeds in arresting uterine hemorrhage. When, without recognizable cause, uterine hemorrhage persists and ordinary remedies have failed, the cervix should be dilated and the cavity of the uterus explored.

The Mechanism and Treatment of Asthma.—KINNEAR (*New York Medical Journal*, lv, 17, p. 458) expresses the view that the asthmatic paroxysm is dependent upon hyperemia of the pneumogastric center in the medulla induced by various influences. A rational mode of treatment would be directed to the control of the blood-supply of the nervous system. With this end in view, it is recommended that an ice-bag be applied to the spine for longer or shorter periods. Such practice has been attended with good results, immediate and remote, the paroxysm being terminated and concomitant symptoms being relieved.

Gold and Sodium Chloride in the Treatment of Paretic Dementia.—BOUBILA (*Annales Médico-psychol.*, Janv. et Mars, 1892) reports the results obtained in the treatment of paretic dementia by means of gold and sodium chloride, in doses varying from a sixtieth to a twelfth of a grain, morning and night. Curative effects were not obtained. In the first stage, the remissions were favorably influenced; in the second stage, the general condition was improved, the weight and the number of red blood-corpuscles increasing.—*Rev. Gén. de Clin. et de Thér.*, 1892, No. 14, p. 214.

Glycerin in the Treatment of Burns.—GRIGORECU (*Répert. de Pharm.*, February, 1892) recommends the treatment of burns by means of pure glycerin. Several drops are applied to the burned part and gentle friction is employed. At first a sense of smarting is perceived to which a sort of anesthesia succeeds. The inflammation seems thus to be averted; in addition, the desquamation of the epithelium takes place little by little, and the resulting cicatrix is less marked than otherwise. The burned part is to be constantly kept moistened by the glycerin.—*Journ. de Méd.*, 1892, No. 11, p. 134.

Insufflation for Tuberculosis of the Larynx.—

℞.—Menthol.	gr. xx-xl.
Pulv. iodoformi	ʒiv.
Pulv. acid. boric.	ʒiv.
Pulv. calcii phosphat. . . .	ʒj.—M.

S.—A sufficient quantity by insufflation, morning and evening.—*L'Union Médicale*, No. 42.

Treatment of Erysipelas.—SCHNEIDER (*Centralbl. für Chirurgie*, 1892, No. 15, p. 305) strongly endorses the treatment of erysipelas by the application of a thick coating of collodion in a broad band beyond and surrounding the area of inflammation.

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SATURDAY, MAY 21, 1892.

A COUPLE OF KEELEY IMITATORS.

ACCORDING to Keeleyism, there are now in the United States about 60 recognized or genuine (save the word !) "institutes" and 214 imitation systems at work. The mere statement, together with the very significant fact that even the penny-newspaporial stomach is beginning to turn against the nauseous dose, indicates that the end of the beastly carnival is fast approaching. The "institute" literature is commencing to abuse the newspaper, because sporadically the newspaper, as we have said, begins to feel qualms and weakness at the pit of its stomach —metaphorically speaking. Herein lies hope.

To keep track of this hurly-burly of drunken stupidity and devilish roguery would take a Mephistophelean wit and endless time and patience. Our table is loaded with evidences *ad nauseam*. From the mass and mess we cite a couple of examples, thanking the kind correspondent who has sent us the original letters from which we quote. For the sake of brevity we leave out the flaming letter-heads, with the array of directors, officers, institutes, and branches, etc., and give only the significant portions. Comment is, of course, unnecessary. Filth can scarcely be fouler; the human mind can hardly fall lower. "Thin-skinned ethical sentiment" need only "fire at" them their own boomerangs:

MY DEAR DOCTOR: Your letter of the — is before me. In answer allow me to say a full, free confession is a good thing for the soul. We honor your frankness, and feel better acquainted since receiving your letter.

In reply, permit me to say my thought regarding your relation to us is that you had better wait for a little time, say two or three months, and then I feel very sure that we shall have a branch institute where we shall be glad to place you in charge, with reasonable assurance of a good business before you.

Some capital is necessary to establish a branch, which you do not seem to be ready for, but, when once established, we do not doubt you may be the proper person to take it in charge if your tender conscience can surmount the ethical difficulties.

Regarding these bugbears which seem to frighten your professional timidity, permit me to say I do not cure alcoholism or any other disease with a formula. The treatment is administered according to indications after I carefully individualize my cases.

My treatment has been given to the profession in a general way. My particular methods of compounding drugs are protected by a trade name which, you will observe, is quite colloquial (bichloride of gold[1]) and quite as unscientific as my method seems to be to you.

Of this unprofessional feature I beg leave to say I most heartily agree with you and my brethren in the sentiment that no conscientious physician who is worthy of his title in that high office will withhold any good thing from those to whom it is due.

Of this particular treatment, however, I must say it is very peculiar to itself. The disease is unlike any other, the successful treatment of it depending quite as much upon methods as matter. We do not believe it could be successfully handled in a general practice.

We also feel certain if all we think we know were thrown wide open to the public, great harm would come of it. The above remark may seem to say, by implication, we are wiser than others, but not so, good brother.

Any man who has brains enough to have honestly won the title of M.D., and has been reasonably favored by the great Father of us all with a peculiar adaptability to this strangely peculiar work, may do all that we have done if he will "sweat the great drops of blood falling down to the ground," that have made us gray in the last seven years; he too may be conscious of bearing some humble part in rescuing the perishing, though he may be criticised by those who have neither the patience or skill, good sense or conviction to do a like grand work.

[1] In another letter the writer says: "Regarding 'bichloride of gold,' criticised by the Editor of THE MEDICAL NEWS, November 14, 1891, permit me to say he is correct in saying that, chemically speaking, there is no such thing as bichloride of gold in stable solution. The term is one used in the market to indicate the chloride of gold and sodium. It is in this sense that we use the term."

When we are thus fully understood by members of the profession, we are quite ready to suffer any criticism which their thin-skinned ethical sentiment may fire at us.

Yours to rescue the perishing rather than please sentimental notions,

—— —— ——, M.D., *Pres.*

Fearing this, from the professional standpoint, may be inconclusive, the business agent of the company thus writes on the following day:

DEAR SIR: Let us, from the business office of the company, add a word supplementing what our Dr. ——— has already said to you.

If the doctor has not convinced you of his not unprofessional attitude, it cannot be contrary to medical ethics if you should offer some of our shares to the people of your community, and so give us the opportunity to pay you a full agent's commission of 10 per cent. on the par value of the shares you sell. Please take this under consideration.

We know the doctor is correct in his position, yet some of the more strict sect may not coincide with us.

The doctor feels that you can be of service to the company, and to himself individually, and we hope that you will be able to see your way clear to join us in our view of the doctor's position and take hold with us.

In any event please let us hear from you regarding the sale of our shares.

Yours truly,

—— —— —— ——

Printed blanks for subscription are enclosed; notices to stockholders of great dividends sure to follow, and "dodgers" promising fortunes, assuring in tremendous capitals that this is "a splendid investment for women," etc. etc. Then follows a typewritten extract from "a confidential letter sent to shareholders (sent herewith for your information)":

We are warranted in giving the most positive assurance that our shares must pay, as an investment, far better than the stock of the most successful business corporations.

We say confidentially to those who are likely to be interested with us as shareholders, that our profit on every case treated for alcoholism is over $50. This alone, you will see, should enable us to pay dividends of from 25 per cent. to 40 per cent., and this is not our only source of revenue. We are establishing branch institutes, and soon will have them in every State. These branches are under our control, and will pay us a certain price for every case treated, so that in the course of a few months our income from this source alone will be very large. This income from the two sources, you will understand, comes to our stockholders in the form of dividends.

We need say nothing here of the moral and benevolent aspect of our work, more than that we are doing a great service to humanity in reclaiming the drunkard, and that fact is recognized and made a valuable aid in the furtherance of the sale of our stock.

It may interest you to know something of Dr. Keeley's experience at Dwight, Ill. His balance-sheet for last year showed a net profit of $1,400,000.

P. S.—The large number of patients already under treatment at our Institute justifies our Board in saying to our stockholders that a quarterly dividend of not less than 3 per cent. will be declared, payable on the coming 1st of July.

From the "Headquarters" of another "—— —— Cure Co." comes the following letter:

DEAR SIR: You are doubtless aware of the wonderful success that Dr. Keeley has had with his famous Gold Cure for Opium, Morphine, Tobacco, and Liquor habits, which is without a doubt the most wonderful discovery of the age.

Dr. Keeley, within the last few years, has amassed an immense fortune through this safely guarded secret, but we have now decided to give to reputable physicians only the benefit of long research and careful study, that they may be as successful in benefiting humanity as Dr. Keeley has been, for we now offer you a complete full formula of the famous Chloride of Gold Cure and at a moderate sum. Our idea in charging a price for this formula is to prevent its falling into the hands of unreliable practitioners and others who might use it to the detriment of humanity rather than a benefit, while at the same time we have endeavored to make the price so very reasonable for so very valuable a secret, that it is within the reach of all reputable physicians.

By this plan the number of patients treated will be infinitely increased, as there are thousands who would take advantage of this treatment, but will not face the publicity of treatment at an institute; such would consider it a Godsend to be treated privately at home by their own physicians. We expect the returns from the number of patients cured to be ample compensation, it being an acknowledged fact that the number of patients cured by the Chloride of Gold treatment is about 99 per cent.; as figures can't lie, you can readily see that much of the talk against this famous remedy has been made by people jealous of the success of others.

For the good of suffering humanity, we want this formula to be used only by physicians of good repute, and as we know you to be such, we take pleasure in offering you the formula for the famous Chloride of Gold Cure for one hundred ($100.00) dollars cash, and a royalty of five ($5.00) dollars for each patient cured by the use of Chloride of Gold during two years from date of acceptance of contract.

We bind you in no way, more than the signing of the enclosed simple contract, depending upon your known good character for the fulfilment of the same.

There is not only a fortune within your grasp, but an opportunity to make yourself an additional blessing to humanity.

Should you desire an exclusive territory, we can make arrangements for the same, but if you don't

wish to take advantage of this considerate offer, kindly let us know at once, that we may make other arrangements.

Trusting you will give this your earliest attention, we are,

Fraternally yours,

———— ———— ———— ————.

JAUNDICE.

ONE by one the distinctions that apparently separate jaundice into two forms have been dissipated. As long as it was contended that bilirubin, the coloring-matter of the bile, was not formed, but only separated in the liver, or that it could be formed elsewhere, and especially in the blood, the distinction between hematogenous and hepatogenous jaundice could be reasonably maintained. Now, however, that investigation has demonstrated the fact that bilirubin is created by the hepatic parenchyma out of materials brought to the liver by the blood, the distinction becomes invalid and only a hepatogenous form of jaundice can be recognized. It is admitted that hematoidin (which occurs in old blood-extravasations) and bilirubin are identical, but the former is never present in quantities large enough to occasion the manifestations of icterus. The absorption of hematoidin may be followed by increased production of biliary coloring-matter or by discoloration of the urine, but neither nor both of these conditions constitute jaundice.

The hepatogenous character of jaundice dependent upon evident obstruction of the biliary passages is capable of ready explanation. Bile is secreted under blood-pressure so low that but little diminution of the pressure or but little resistance to the discharge of bile is necessary to bring about resorption, the pigment being deposited in the various textures of the body and giving rise to jaundice. The difficulty was encountered in endeavoring to explain the mechanism of the jaundice that occurs, for instance, in acute yellow atrophy of the liver, in phosphorus-poisoning, in yellow fever, in so-called Weil's disease, and in other constitutional affections. In these no cause of biliary obstruction was apparent, and, in the absence of other recognizable cause, the jaundice was dubbed hematogenous. It now appears, however, that even in these the jaundice is actually obstructive. By careful experiments carried on with wonderful persistence for a long period of years, STADELMANN (*Der Icterus und seine verschiedene Formen*, etc., FERD. ENKE, Stuttgart, 1891) has succeeded in demonstrating that in many of the conditions in which jaundice exists without apparent obstruction there is really a catarrhal condition of the ultimate biliary radicles, so that the process is one of resorption, and hence hepatogenous.

Under certain conditions, especially such as are attended with disintegration of the blood and hemoglobinemia and hemoglobinuria, it may happen that the biliary coloring-matter is secreted in excess, a state known as polychromia or pleiochromia resulting, in consequence of which jaundice may develop. The mechanism in these cases is, as in the others, really hepatogenous or resorptive. If bile is secreted in excess the condition is known as polycholia. This, however, is not necessarily attended with jaundice.

Some of the symptoms associated with jaundice are dependent upon the absence of bile from the intestine. Among these are the deficient peristalsis and constipation; the fermentative changes in the intestinal contents, which, in consequence, are more than usually offensive in odor and which sometimes occasion diarrhea; the stools are pale in a degree proportionate to the completeness of the interference with the entrance of bile into the intestine. Other symptoms, like the depression of the temperature, the slowing of the heart, the itching of the skin, are attributable to the presence of the biliary acids in the circulation. In the cases in which more profound and especially cerebral symptoms are present, these may be ascribed to the primary factor in the development of the jaundice, be that infection or intoxication.

SELECTIONS.

STATE AID FOR THE PAN-AMERICAN MEDICAL CONGRESS.

IN the previous issue of the *Medical Record* will be found the circular of information of the Pan-American Medical Congress, issued March 17th, which we advise all our readers not only to peruse but also to keep for reference. If they do not keep it the chances are that, as the time for the meeting approaches, they will wish to recall some of the provisions there laid down, and then they will remember our advice and wish they had acted upon it.

As is there stated, the Congress has been incorporated under the laws of the State of Ohio. This we cannot but regard as a very wise and useful measure, although we believe the American Medical Association has existed for a number of years without having been made a corporate body. The incorporation was at the instance of

a well-known statesman, who recognized the public and political (not partisan) importance of such a drawing together of men of science from the two Americas, and who believed that the general Government would aid the undertaking in a substantial way were there a body corporate legally empowered to receive and disburse money.

Concerning the propriety of Congress making an appropriation to meet the needs of this meeting there can be, it seems to us, no question. It is an unfortunate fact that the Southern Republics and ourselves have been too great strangers to each other. We are of different races, and hitherto the only bond of union between us was that of a common sentiment in favor of liberty—an abstract idea, and one good for orators to declaim about, but really a pretty fragile bond to unite two such dissimilar peoples. The only way in which true friendship and mutual respect and liking can be promoted between the different nations of this continent is by mutual exchange of visits and consequent personal contact of the individual members of these nations. Nothing is so likely to bring about such acquaintance and promote reciprocal good feeling as a Congress of this kind, where all meet on the neutral ground of science, political animosities and social prejudices being laid aside and forgotten. It will not only benefit medicine, but it will directly benefit this whole country, and every other country in America which may send delegates to Washington.

It is, therefore, no more than just that the National Congress should aid the physicians who have undertaken this work. We should be in a condition to receive our guests in a becoming manner and to do them honor. As is seen in the regulations, the foreign members are to be charged no fee for registration, the total expense falling upon members residing in this country. It cannot therefore be said that the physicians in the United States are seeking to throw the entire burden upon the country. But as the nation will benefit by the holding of this Congress in 1893, it is but right and just that it should also contribute to make the Congress a success in every way, financially and socially, as well as scientifically.—*The Medical Record.*

DRUG MANUFACTURERS AS MEDICAL TEACHERS.

There is a legitimate field for manufacturing pharmacy, and with regard to it we have naught but words of praise. It is legitimate, it is necessary, that there shall be special workers to supply in the purest quality, and in the best forms, the substances which clinical and scientific research have shown to be useful in the management of disease. But these substances must wait the demand for them. For a manufacturer to attempt to create a fictitious demand for his products by assuming the rôle of medical instructor, is an insult to the profession and a special insult to each individual practitioner to whom he sends his circular. As we see, such men do not hesitate to manufacture explanations of pathological conditions which will apparently favor the use of their remedies.

How absurd it is for men engaged in commercial pursuits to attempt to solve the great and intricate problems of medicine, and how criminal it is to permit the statements of such interested parties to have the slightest weight in deciding questions of treatment.

These are the firms who send drummers out to assist physicians in their work. There is nothing more aggravating than the representative from such houses. He is frequently a doctor who has failed in his own profession, or who has not yet entered upon it, or else a drug clerk, or a man who has already proven himself successful in selling new lines of stoves, or boots and shoes. And yet these very men attempt to instruct medical men on physiological and pathological points, and means of treatment, when they have once succeeded in forcing themselves upon their attention.—*Journ. Am. Med. Assoc.*

CORRESPONDENCE.

NEW YORK.

Looking back over the work of the medical societies here during the past winter, I recall the fact that the important subject of urinary analysis has received attention in two important discussions. The first occurred before the Post-graduate Clinical Society in the early part of the season; the second took place only a few days ago at the last stated meeting of the Academy of Medicine.

On the former occasion, the discussion was opened with an elaborate paper by Dr. W. H. Porter, giving extensive original studies in physiologic chemistry. The general opinion expressed by those who followed in the discussion, was that it was unsafe to look lightly upon the occurrence of albuminuria, for, while admitting that this condition was produced by extremes of heat and cold, and by various derangements of the circulatory system, it should ordinarily be looked upon as a "danger signal."

Granular casts, according to Dr. F. R. Sturgis, mean granular degeneration not only in the epithelium, but in the kidney. When the training of athletes was less thoroughly understood than now, it was not uncommon to find numerous hyaline casts in the urine of those undergoing the training, until they had become inured to its hardships, yet this was apparently only a very evanescent condition, and left no subsequent traces of its presence.

Dr. C. L. Dana had found the urine of neurasthenics usually voided in large quantities, it had a low specific gravity, and contained an increased proportion of the earthy phosphates. He had carefully studied the fluctuations in the quantity of chlorides present in cases of pneumonia, and while he acknowledged their general relation to the inflammatory process, he thought the other clinical phenomena much more trustworthy guides.

Having read and heard so much about the value of the gonococcus as a means of differential diagnosis between a simple and a specific urethritis, I was surprised to hear such eminent men as Dr. R. W. Taylor, Dr. F. R. Sturgis, and Dr. F. Ferguson unite in denying that this organism had any such value; and they argued in support of their position, that five other microörganisms had been found present in the gonorrheal discharge, and careful experiments had

shown that in the urethræ of children or of those who had never had gonorrhea, the so-called gonococcus was present. In short, they considered that the position assumed by Neisser and his followers, that the presence of this organism in a discharge brands it as of gonorrheal origin, was likely to prove unjust and injurious to many innocent persons, and would eventually place the medical profession in a ridiculous light.

In the recent meeting at the Academy, Dr. Andrew H. Smith spoke of a reaction between ether and urine, which he thought was entirely new and opened up a promising field for study. He had accidentally observed the reaction in the course of some experiments that he had made with the object of differentiating serum-albumin from other forms of albumin in the urine. When sulphuric ether is very thoroughly mixed in a test-tube with most specimens of urine, the whole mass becomes foamy, and if the tube be well corked, and set aside for some hours, it will be found that the tube contains a firm, opalescent, gelatinous plug. From the fact that this reaction is usually absent only in the urine of persons who have been fasting for many hours or who have been on a restricted diet, such as a milk-diet, it seemed probable that this material separated from the urine by the ether represented the excess of proteids taken into the blood. If the urine be albuminous, the reaction with ether is still obtained, provided the person be on a liberal diet; but if not, it will only appear when the albumin is removed by heat and nitric acid, and the filtrate tested with the ether. Dr. Smith suggested possible explanation, founded on the knowledge obtained by this reaction, of the occurrence of anuria after prolonged etherization, viz., that if the operation be performed a number of hours after a meal, or, in other words, at a time when the blood contains a maximum quantity of the products of digestion, the ether, as it is excreted from the kidneys, may cause a plugging up of the uriniferous tubules with this gelatinous material.

Another important discussion was that before the Section on Pediatrics of the Academy, on the Therapeutics of Diphtheria. It requires almost as much patience and forbearance to attend a discussion nowadays on this subject as to attend one on the treatment of tuberculosis, but nevertheless your correspondent felt fully repaid for his effort on this occasion, for besides hearing an expression of opinion from a number of those whose experience and judgment add weight to what they say, there were a few little kernels garnered from the usual amount of chaff that seemed, in the writer's humble opinion, to have a positive practical value.

Dr. Joseph E. Winters advocated irrigation with large quantities of *weak* disinfectant solutions, special care being taken to avoid irritating the adjacent tissues, and so rendering them vulnerable to the onslaught of the Loeffler bacillus, and also to carry out the washing in such a manner as to cause the minimum amount of discomfort and exhaustion to the patient. His method consists in using a Davidson syringe with a nasal tip, and injecting, preferably, in most cases, through the nose, a saturated solution of boric acid or a ten per cent. solution of hydrogen dioxide, from a half to one pint of solution being used each time. In very severe cases, when it seemed advisable to wash out the mouth, he attached to the syringe a rubber tube or soft catheter, which was then passed as far back as the last molar tooth. The patient could be placed on the side, and the bedding be protected with a rubber cloth, arranged so as to carry off the fluid. He believed also in inhalation of steam, and for this purpose nothing was better than the ordinary Arnold steam-sterilizer with the croup-kettle attachment; but whatever form of kettle be employed, it is absolutely necessary that two or three feet of large rubber *hose* be used to conduct the steam from the kettle to the patient. He recommended adding two drams of oil of eucalyptus and two ounces of turpentine to the water in the kettle. He laid great stress on the advantage to be derived from the inhalation of the fumes of burning sulphur, and stated that it relieved the inflammatory swelling, the dryness of the throat, and the painful deglutition, much better than did either steam or cocaine. One remarkable feature of this treatment is that the patient often experiences great relief when the air of the sick-chamber is so laden with sulphurous acid as to make it unbearable for the attendants.

Dr. H. D. Chapin spoke of the obstacles that are encountered in endeavoring to carry out proper disinfection and quarantine in limited apartments, and he said that almost incalculable good would follow the establishment by the municipal authorities of stations or places of refuge for the well children in families stricken with the disease. He advised that the attendant should have an outer garment to wear only in the sick-room, that all rags soiled with secretions should be burned, and that after the termination of the case, pillows, comforters, and like articles, should be thoroughly beaten on the roof, and exposed for many hours to the sunlight and fresh air. Floors and ceilings should be washed with a 1 : 1000 solution of corrosive sublimate, and papered walls wiped down with stale bread-crumbs.

Dr. C. W. Allen called attention to the very prudent practice in vogue in Europe, of interposing a glass plate between the physician's face and the patient while local applications or examinations are being made, thus avoiding the lodgment of particles of secretion in the physician's eyes, or upon his face or beard, and so not only protecting him, but diminishing the chances of his carrying the disease to others.

Dr. L. Emmett Holt said that sick children were most commonly over-fed and over-stimulated. Milk, beef-juice, mutton-broth, wine-whey, oatmeal and barley gruels furnish a sufficiently varied dietary, and these articles are much less likely to disagree with the stomach than ice-cream or wine-jellies. When forced feeding becomes necessary, the rectum cannot be depended upon; it is better to use a soft-rubber catheter introduced through the nose and attached to a funnel.

Dr. Abraham Jacobi again declared his steadfast belief in the efficacy of the mercuric chloride treatment, and dwelt upon the importance of recognizing the first flutterings of the pulse that predict the occurrence of dangerous heart-failure unless the practitioner heeds the warning, and without delay resorts to the bold but judicious use of cardiac stimulants.

While the usual amount of good scientific work has been done in the Academy of Medicine this season, the even tenor of its way has been somewhat disturbed by murmuring and dissension. It began with an arraignment by Dr. R. W. Amidon, in a public letter, of the

methods pursued by the officers of the Academy, particularly in regard to the manner of conducting the discussions. He complained that to the announcement of the reading of an important paper, or the occurrence of a special discussion, were appended the names of several gentlemen who were to participate in the discussion, and that not only were so many members thus assigned to take certain parts in the discussion that there was practically no time left for others to join it, but usually the same gentlemen figured in this way for every important discussion in the branch with which they were especially identified. While anyone who is a constant attendant at the meetings of the Academy and of its Sections knows this to be true, the remedy is not so apparent, for the object of assigning certain members to certain topics is to prevent prolix and irrelevant discussion. It has certainly done away with much loose and ill-considered debate, but it has not disposed of irrelevant talk, as those invited to "open" the discussion come with papers already prepared, and deal with many points not directly bearing upon the subject in hand. There seems to be no doubt but that this plan, which has been in vogue for some years past, draws out a larger attendance and a more valuable discussion; but, on the other hand, it does not give a proper opportunity for the young blood to assert itself.

The present policy of the authorities is probably the wisest under the circumstances, namely, to continue to assign certain men to "open" the discussion, but to limit this number so as to give ample opportunity for others to take part. There have been other troubles, chiefly in regard to the increase in the annual dues, but this is hardly a matter of sufficient general interest to warrant a place here.

I recently heard an amusing incident illustrating the wonderful delicacy of a blind person's sense of touch. In a large dispensary patronized by many Italians, and consequently where those whose duty it is to take the money are constantly on the alert for counterfeits, an exceedingly clever counterfeit dime was accepted as genuine, and later on was given out in change to one of the dispensary physicians, who also failed to notice that it was a spurious coin. Curiously enough, however, when this physician handed out the dime to a blind paper-dealer, the latter instantly returned it with the remark, "It's no good;" and careful examination showed that the poor blind man was correct.

DETROIT.

The Coming Meeting of the American Medical Association—The City ready for its Visitors—The Michigan State Medical Society—The St. Mary's Hospital—The late Dr. C. B. Gilbert—A Single Fare to Detroit.

DETROIT, which was recently described by a New York medical journal as "a beautiful city of 100,000 inhabitants, situated on Lake Erie," is just now the cynosure of medical eyes. The city is beautiful enough—none more so—but its population is 250,000, and it is situated on the Detroit River, a broad, expansive strait, which connects Lake Erie with Lake St. Clair. It derives its present medical importance from the fact that early next month the American Medical Association will hold its annual meeting here. Visitors from the East and South will be much delighted with the appearance of our city in the month of June, for Detroit at this time of the year is an ideal summer residence. The capacious steamers that ply up and down the stately stream that flanks its southern boundary will, no doubt, during the evenings of the week of the meeting, be crowded with physicians, who will doubly appreciate the invigorating breezes and picturesque scenery after the toils of the day spent in the sections of the Association.

Everything is ready for the reception of our medical visitors. The Committee of Arrangements is jubilant with the prospects of success. "We have the ships, we have the men, and we have the money too." The ships will be used for excursion purposes, and it is hoped that every visitor will be given the opportunity of visiting one of the river-resorts and feasting on the chickens and frogs that flourish so bountifully hereabout. The men will be on hand in the sections of the Association. A full and complete program is assured. Indeed, the Detroit meeting will be an epoch-marking one for the Association. For the first time in its history two working sessions will be in force, and at these sessions papers will be read and demonstrations made by some of the most eminent and renowned men in the country. The American Medical Association will show itself in its highest and best form—as a congress of specialists bound together by fraternal and professional ties.

The Michigan State Medical Society held its twenty-seventh annual meeting in Flint, May 5th and 6th. The weather was exceptionally bad, and this somewhat affected the attendance. The Society, however, has an inherent vitality of its own that no such trivial cause as bad weather can depress. The sections were well represented and more real scientific work was accomplished than ever before in the history of the Society. The *Transactions* of the Michigan State Medical Society has been pronounced a credit to the State by so competent a judge of such matters as THE MEDICAL NEWS.

The St. Mary's Hospital, which has recently opened a new wing, has been benefited financially by the profits accruing from a flower-show, which was held last week.

The local profession has recently sustained a loss in the death of Dr. Caleb B. Gilbert. Dr. Gilbert was an able and successful practitioner, and a scholarly and refined gentleman. His "Metaphysics" will be long remembered.

The single fare, which has been secured from the railroads for delegates to the American Medical Association, ought to supply an economic motive—if that were needed—sufficient to induce Eastern physicians to visit Detroit. There are many other inducements, and it is hoped that not the least of these will be the sincere and hospitable welcome the profession wishes to extend to all its coming guests.

NEWS ITEMS.

Program of the Section on Surgery and Anatomy of the American Medical Association.—

Tuesday, June 7th.—Afternoon Session.

1. Address of the Chairman. "Surgery of the Gall-bladder and Ducts," by J. McFadden Gaston, Atlanta,

Ga. 2. "Obstruction of the Cystic Duct, with a Case," by W. H. Myers, Fort Wayne, Ind. 3. "Peritonitis from Gall-stones," by W. E. B. Davis, Rome, Ga. Discussion opened by A. Vander Veer, Albany, N. Y.; F. W. Ross, Toronto. 4. "Gunshot Wound of the Liver and Stomach; Laparotomy; Recovery," by James T. Jelks, Hot Springs, Ark. 5. "Eight Cases of Esophageal Stricture," by D. S. Campbell, Detroit.

Wednesday, June 8th.—Morning Session.

6. "Intestinal Obstruction," by Dudley P. Allen, Cleveland, O. 7. "Intestinal Obstruction and its Treatment," by H. H. Mudd, St. Louis, Mo. 8. "Comparative Test of Anastomotic Devices," by John D. S. Davis, Birmingham, Ala. 9. "A Clinical Contribution to the Operative Treatment of Acute Intestinal Obstruction," by Nicholas Senn, Chicago, Ill. Discussion opened by S. McMurtry, Louisville.

Afternoon Session.

10. The Comparative Methods of Inguinal and Rectal Colotomy," by J. M. Mathews, Louisville, Ky. 11. "Intestinal Lesions in Abdominal Surgery," by Joseph Price, Philadelphia, Pa. 12. "On the Treatment of Injuries of the Abdomen not requiring Surgical Operations," by J. Schenck, Mt. Carmel, Ill. 13. "Emergency Work in Abdominal Surgery," by Mordecai Price, Philadelphia, Pa. 14. "Herniæ: Operable and Inoperable," by T. H. Manley, New York, N. Y. 15. "A Few Points in the Management of Strangulated Hernia," by W. B. DeGarmo, New York, N. Y. 16. "Illustrations of Methods of Operating in Hernia," by H. O. Marcy, Boston, Mass.

Thursday, June 9th.—Morning Session.

17. "The Cremasteric Reflex in Varicocele," by T. A. McGraw, Detroit, Mich. 18. "Experimental Researches in the Implantation of the Ureters into the Rectum," by R. Harvey Reed, Mansfield, Ohio. 19. "Visceral Phlebotomy," by George Harley, London, Eng. 20. "Advances in Aseptic Surgery," by F. J. Thornbury, Buffalo, N. Y.

Afternoon Session.

21. "Operative Procedures at the Base of the Brain," by Ernest Laplace, Philadelphia, Pa. 22. "Gunshot Wounds of the Cerebrum," by C. E. Ruth, Muscatine, Ia. 23. "Air in the Veins," by Edward Martin, Philadelphia, Pa. 24. "Total Excision of the Lower Jaw for Malignant Disease," by C. B. Nancrede, Ann Arbor, Mich. 25. "Cosmetic Surgery of the Nose," by J. B. Roberts, Philadelphia, Pa. 26. "Notes on the Diagnosis and Treatment of Lepers," W. T. Corlett, Cleveland, O. 27. "The Treatment of Infected Wounds of the Extremities by Continuous Immersion," by F. Jenner Hodges, Anderson, Ind.

Friday, June 10th.—Morning Session.

28. "Neurectomy of Great Sciatic Nerve; Removal of Astragalus for Talipes Equino-varus; Removal of Salivary Calculus; Amputation of Scrotum and Prepuce for Abnormal Condition of the Skin," by R. Merill Ricketts, Cincinnati, O. 29. "Tracheotomy in Reference to Foreign Bodies in the Air-passages," by W. F. Westmoreland, Atlanta, Ga. 30. "Forced Respiration; Fell Method of Face-mask and Tracheotomy in Diphtheria; Report of Case," by George E. Fell, Buffalo, N. Y.

Afternoon Session.

31. "The Modern Treatment of Gonorrhea and its Complications," by J. J. Darby, Columbia, Ala. 32. "A Rational Treatment of Enlarged Prostate, founded upon its Pathology," by Ernest Laplace, Philadelphia, Pa. 33. "Methods of Examination of Diseases of the Joints," by W. R. Townsend. 34. "Treatment of Compound Fractures," by W. H. Myers, Fort Wayne, Ind. 35. "Diseases of the Knee-joint and Hip-joint," by J. C. LeGrand, Anneston, Ala. 36. "Amputations in the Light of Mechanical Science *versus* Prothetical Science, illustrated with artificial limbs," by S. L. McCurdy, Dennison, O. 37. "Antiseptic Physiological Surgery," by John L. Link, Terre Haute, Ind. 38. "The Radical Cure of Hydrocele, by a New Method," by H. O. Walker, Detroit, Mich.

Section of Ophthalmology of the American Medical Association.—The following is a list of the papers promised the Section of Ophthalmology of the American Medical Association, for the meeting at Detroit, June 7, 8, 9, and 10, 1892.

Dr. Dudley S. Reynolds: Gradation of Lenses. Dr. W. Cheatham: Some Peculiar Cases of Astigmatism. Dr. H. V. Würdemann: What May be Considered Normal Corneal Astigmatism, with Results from Keratometric Examination of One Hundred Emmetropic and One Hundred Ametropic Pairs of Eyes. Dr. B. Alexander Randall: A Study of the Eyes of Three Hundred and Fifty-seven Boys in the Penn Charter School, of Philadelphia, with Notes on the Examination of School Children. Dr. Edward Jackson: Latent Hyperopia. Dr. A. E. Prince: The Fourth Degree Prism in the Correction of Hyperphoria. Dr. George T. Stevens: On the Relations of the Motor Muscles of the Eyes to Certain Facial Expressions. Dr. E. J. Gardiner: On the Treatment of the Anomalies of the Ocular Muscles. Dr. C. J. Lundy: Eye-strain and its Relation to Functional Disorders of the Nervous System. Dr. Louis J. Lautenbach: What Rules Shall We Adopt in Prescribing Cylinders for the Relief of Asthenopia? Dr. J. A. White: Immature Cataract and the Best Method for Hastening Maturity. Dr. A. J. Ervin: Treatment of Incipient Cataract. Dr. H. Knapp: Method and Results of Simple Extraction. Dr. A. R. Baker: Pathology and Treatment of Infantile Cataract. Dr. George Friebis: Case of Congenital Ectopia Lentis. Dr. B. L. Milliken: Injuries to the Lens, with Cases. Dr. Charles A. Oliver: Clinical History of a Case of Successful Extraction of a Piece of Steel from an Iris and Lens by an Iridectomy, with Subsequent Absorption of the Lens Substance and Recovery of Normal Vision. Dr. T. E. Murrell: Eye Injuries Considered in Relation to Sympathetic Affections. Dr. J. J. Chisolm: The Advantages of Optico-ciliary Neurotomy Over Enucleation. Dr. J. E. Weeks: Surgical Treatment of Trachoma. Dr. Eugene Smith: New Operation for Trichiasis and Distichiasis—Galvano-cautery. Dr. F. C. Hotz: Thiersch's Skin-grafts in Ophthalmic Surgery. Dr. Edward Jackson: Osteoma of the Orbit; Removal, with Preservation

of the Visual Functions. Drs. J. A. White and W. M. Gray: Orbital and Ocular Growths, with Report of Three Cases. Dr. J. G. Carpenter: Tumor of the Cornea. Dr. Robert D. Gibson: Treatment of Keratoconus by Means of the Galvano-cautery and Iridectomy. Dr. H. Gradle: The Etiological Relation of Nasal Anomalies to Diseases of the Eye. Dr. Leartus Connor: Heterophoria as a Cause of Rhinitis. Dr. S. D. Risley: Conservatism in the Treatment of Disease of the Lachrymal Passages. Dr. Charles Hermon Thomas: An Operation for Stricture of the Lachrymal Duct. Dr. H. M. Starkey: The Treatment of Epiphora. Dr. Thomas H. Fenton: The Value of Biniodide of Mercury in the Treatment of Eye Diseases. Dr. H. Ernest Goodman: Clinical Methods at Wills Hospital. Dr. G. M. Gould: A Method of Infection and Prophylaxis of Purulent Conjunctivitis. Dr. G. C. Savage: Poultices in Ophthalmic Practice. Dr. R. Tilley: Monocular Diplopia. Dr. W. Oliver Moore: Hysterical Blindness in the Male. Dr. J. F. Fulton: Treatment of Detachment of the Retina. Dr. S. C. Ayres: Embolism of the Central Artery or Thrombosis (?), with Report of an Interesting Case. Dr. G. E. de Schweinitz: Embolism of the Central Artery of the Retina, with the Report of Three Cases. Dr. R. Tilley: Report of a Case of Zonular Atrophy of the Choroid. Dr. J. L. Minor: Diseases of the Eye of Malarial Origin. Dr. William Dickinson: Total Decussation of the Optic Nerve at the Chiasm (Probably). Dr. Charles W. Kollock: The Eye of the Negro.

Dr. J. L. Thompson, Indianapolis, Ind., *Chairman*. Dr. G. E. de Schweinitz, Philadelphia, Penna., *Secretary*.

The Medical Guild of Misericordia is a society of medical men, practitioners, and medical students interested in the work of mercy for the sorrowing and suffering. The Guild comprises an order of brothers and associates—the former communicants of the Episcopal Church and the latter members of any Christian denomination. The Misericordia is designed to develop, so far as possible, the invaluable opportunities which exist for extending Christ's kingdom on earth through the aid of medical missionaries. Members of the Guild obligate themselves to engage in any or all of the above works whenever occasion offers, and to consider it their especial duty to watch for opportunities of so doing. In a word, the object of the organization is to impress upon and keep before the minds of its members the duty of doing works of mercy, both spiritual and corporal, whenever it is possible. Wherever there is suffering, there is our opportunity. The Misericordia is designed to promote the spirit that is suggested by the name, and that cannot be put into the form of absolute rules; at the same time it can be made an obligation on the part of its members to be on the lookout for occasions to exercise the virtue of mercy to all who are in suffering or affliction, for Christ's sake. It also aims to afford professional relief in urgent cases to the worthy poor. The Guild desires to have representatives in every city and town, and especially in mining regions, railroad centers, etc., so that in case of sudden and appalling disaster, like that in Johnstown, Pa., the work of relief may be intrusted to the care of members of the Guild, and speedy aid and comfort be thereby attained. It is a noble work, giving emphasis to the life of all medical men, who are so well known for charity the world over. Members of the Misericordia who are qualified practitioners of medicine are requested to offer their services to the clergymen of the parish in which they reside, to look after special cases, and at all times to be ready to give their services as the Church may have need of them; and also to take charge of any needy persons, not necessarily paupers, but such as may be unable to pay fees. When, through tempest, fire, famine, or pestilence, or from other causes, great suffering exists, the members of the Guild nearest to the afflicted community at once report to the proper authorities for duty, and notify, by telegraph or otherwise, the Provost of the Guild. Efforts will then be made at once to secure needed relief. There are no ceremonies in connection with the admission of brethren or associates. Suitable references are required from applicants, and these being satisfactory their names are added to the roll of members. The admission fee is one dollar and the yearly dues one dollar. Contributions to the general relief fund are urgently needed. For further information address W. Thornton Parker, M.D., Provost, P. O. Box 1405, Beverly, Mass.

The American Surgical Association will meet in Boston May 31, and June 1 and 2, 1892. The following preliminary program has been arranged:

Dr. John B. Roberts, of Philadelphia, will read a paper entitled "The Treatment of Uncomplicated Fractures of the Lower End of the Humerus and of the Base of the Radius;" Dr. John Homans, of Boston, a paper on "Fibroid Tumors of the Uterus;" Dr. W. T. Briggs, of Nashville, a paper entitled "Surgical Operations in Persons Suffering from Diseases Not Connected with That Necessitating the Operation, such as Chronic Malarial Poisoning, Diabetes, Organic Heart-disease, etc.;" Dr. N. P. Dandridge, of Cincinnati, a paper entitled "Surgery of the Tongue;" Dr. W. H. Carmalt, of New Haven, Conn., a paper entitled "Conditions Demanding Excision of the Globe of the Eye;" Dr. T. F. Prewitt, of St. Louis, a paper on "Ancient Contractures of the Hip- and Knee-joints;" Dr. A. T. Cabot, of Boston, a paper entitled "Report of Operations upon Spina Bifida and Encephalocele, with Remarks."

Dr. Cohen's Case of Excision of the Larynx.—We are informed that at the next meeting of the Philadelphia County Medical Society Dr. J. Solis-Cohen will exhibit a patient from whom he recently excised the larynx and first ring of the trachea, and that he will utilize the case in disproval of some recent theories as to the manner in which the air of respiration receives its moisture.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

MISCONCEPTIONS AND MISNOMERS REVEALED BY MODERN GASTRIC RESEARCH.[1]

BY CHARLES G. STOCKTON, M.D.,
PROFESSOR OF MEDICINE, MEDICAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO.

IT is now twenty years since Murchison described the condition that we still know as lithemia or latent gout. The late Dr. Fagge in England and Dr. Draper in this country have emphasized the importance of the disease, and the latter has given us a theory, which practice often seems to confirm, and which by many is believed to explain the relation that evidently exists between the character of the food taken and the lithemic state.

It is needless to recall the teaching that, owing to the facility with which the carbo-hydrates appropriate the lessened amount of oxygen going to the liver, there remains too little for the proper oxidation of the nitrogenous substances, the waste of which, as a result, passes into the circulation as uric acid. It will be remembered, that for this reason it is recommended that carbo-hydrates be withheld in cases of lithemia, and that the diet be restricted to nitrogenous substances. A complete withdrawal of carbo-hydrates is advised in aggravated cases. Now the more aggravated the case, according to this contention, the more it approaches typical gout; so that but a single step is needed to bring one to the position of advising an albuminoid diet in gout. Indeed, this is the present attitude of some adherents of the belief. From this position, viz., that meats constitute the proper diet for typical gout, let us retrace our steps to the question of a typical gout and the proper diet for it.

Gout, all will acknowledge, is common in England—not merely typical gout, with occasional severe paroxysms, with arthropathies and all the train—but gout manifesting itself in a variety of ways, as, for instance, in severe and persistent headaches; but in England, instead of allowing meats to these sufferers, they are placed upon an almost non-nitrogenous diet, and it is found that the more liberal the allowance of azotized substances the worse becomes the patient.

How is it that meats disagree with the gouty in England and agree in America? Observation teaches me that this difference is owing to a misconception; and that in the great majority of cases, in point of fact, an albuminoid diet is an improper diet in gout, whether it be typical or latent; but at the same time I am prepared to admit the signal benefit derived from prescribing this diet for many so-called lithemics in this country. In plainer language it is suggested that gout, although becoming more frequent, is still an uncommon affection in America; but, on the other hand, there is scarcely a disorder so often presenting itself to the city practitioner as that which so persistently has been called lithemia. Wherever mental strain, "nerve-tire," and imperfect oxygenation are seen, there is witnessed that group of phenomena that is here denominated lithemia. In all modesty let me aver that this is not gout, and that it is what Murchison described as *lithemia* may well be doubted.

All that make careful study of such cases must be impressed with the frequency of complaint as to the primary digestion, and, if the study be thorough, this association of digestive trouble with lithemia will be found invariable. Of course, this has not been overlooked, but the fault has been attributed to the liver. Now, habitual and painstaking examination of the stomach-contents alone is necessary to change one's belief in this matter, inconsistent as this may be with views that I held in 1885.[1]

It is maintained, then, that the condition in question is a toxemia of gastric origin, the result of wrong living, and particularly of wear and tear of the nervous system, and not the atypical expression of a mysterious, hereditary disease with its joints, its tophi, its arteries, and its kidneys.

To Leube's method of gastric aspiration we owe most of our precise knowledge of disorders of digestion, and following its use it was but natural to expect a mass of conflicting ideas as to the nature of these disturbances. Yet from this indiscriminate mass we have now some well-assured facts. We know that the normal gastric chemistry is often perverted, and that fermentable substances are capable not only of interrupting their own proper digestion, but of interfering with the digestion of substances of other kinds, of throwing upon the

[1] Read at the seventh annual meeting of the Association of American Physicians, held in Washington, May 24, 25, and 26, 1892.

[1] "Nutrition in Lithemia," Trans. N. Y. State Medical Association, 1885.

liver the task of oxidizing materials but partly and wrongly prepared. Following this excessive demand for oxygen come imperfect assimilation, toxemia, uricacidemia, and lithuria (Gouley).

What then, is the natural indication? It would seem to be the correction of the primary digestion. Experience proves that this is not too great an assumption. Correct digestion and you correct the toxemia. For the reason that meats are not likely to ferment, the albuminoid diet often affords at least temporary relief in these cases—relief of digestion and relief of toxemia.

This appears to be a reasonable explanation of the contradictory opinions held as to the proper diet in so-called lithemia, and why the albuminoid diet has received so great support from the practitioners in this country as compared with that from those in England; but the albuminoid diet often fails in these cases—its adoption is followed in some by immediate aggravation of symptoms, and in others not until a certain lapse of time.

This is readily explained by the systematic study of the gastric contents, for it will be seen that those that are subject to hypo-hydrochloric acid secretion are unable to digest meats satisfactorily, and that these substances, in fact, not infrequently undergo a putrescent decomposition in the stomach, inducing varied disturbances; the exception is when sufficient hydrochloric acid is administered after the meal to make digestion possible.

When, on the other hand, there is hyper-hydrochloric acid secretion (which in the neurotic frequently occurs), the albuminoid diet often affords instant relief, because digestion becomes facilitated; the liver is no longer overtaxed and is better able to convert the proteid waste into urea, and thus the lithemia is diminished. This will not be overcome, however, unless the patient sufficiently exercises and thereby increases oxygenation; but there will be diminished alkalinity of the blood, heightened acidity of the urine, and alkalies will be required for relief.

Undoubtedly, those that suffer from the gouty diathesis become victims of lithiasis more readily than others, but their number is relatively so small that one can say that lithemia is an auto-infection occasioned by imperfect primary digestion, usually arising in the stomach; and the failure of this organ is the result of too feeble innervation in those whose lives are relatively sedentary and whose drafts upon the nervous system are so great as to induce appetites proportionately too large for the physical activity of the organism.

The treatment, to be satisfactory, should be based upon the systematic study of gastric digestion. To resort at once to alkalies or mineral acids is to begin at the wrong end; and to advise indiscriminately an albuminoid diet, while it frequently succeeds temporarily, cannot with safety be long continued and often fails either wholly or in part.

In point of nomenclature it is suggested that the terms lithemia (Murchison), uricemia (Flint), uricacidemia (Von Jaksch), are too limited, for while the uric acid is manifestly a notorious offender, there are doubtless other more subtle and less understood substances that often find their way from the alimentary canal into the circulation, to disturb function and injure structure of various parts. To describe these states the term auto-intoxication (Bouchard) is at least suggestive.

In view of the enthusiastic labors of the French in the inviting realm of gastric chemistry, we may reasonably expect a more exact knowledge of these forms of toxemia in the future. Meantime, clinical study demonstrates their existence and importance.

From my case-books I am prepared to report a sufficient number of instances to justify the statement that neurasthenia, vertigo, persistent headache, insomnia, muscular spasm, and epileptiform convulsions; that naso-pharyngeal catarrh, laryngitis, tracheo-bronchitis, and asthma; that Bouchard's nodules, some cases of so-called arthritis deformans, and other joint-troubles, not to mention a variety of minor conditions and those concerning which there is a reasonable doubt, depend upon gastro-intestinal toxemia. At any rate, so far as space will admit, I shall append the reports of the cases referred to—cases that proved manageable by treatment directed to the digestion, as guided by a study of the gastric contents, and which in most instances had long resisted other lines of treatment.

I am aware that some of these cases are open to criticism. It may be said of some that they were of reflex origin; of others, that additional factors were not excluded, and finally that the general conduct of the cases, rather than the special management, led to the improvement. In reply, it is advanced that all of these objections were considered and for the most part dismissed as untenable.

In 1889, Dr. Garland read before the Association of American Physicians an admirable paper on "Gastric Neurasthenia," in view of which and of the discussion that it provoked, I feel considerable diffidence in advancing the subject of gastric disorder as the cause of neurasthenia. Nevertheless, these cases exist, perhaps more often as the result of gastrectasis.

On this subject Champagnac, in a recent monograph published in Paris, concludes: "1. The coincidence of dilatation of the stomach and prolapse of the right kidney and neurasthenic disturbances is absolutely incontestable. 2. One may, by directing treatment toward the dilated stomach, cure the nervous symptoms that accompany and follow dilatation. 3. This treatment does not cause the dila-

tation to disappear, but prevents the auto-intoxication that is the cause of the neurasthenic symptoms. 4. Although the gastrectasia does not disappear entirely, the patient ceases to be nervous. 5. In the pathogenesis of neurasthenic disturbances we do not admit the theory of Glenard—enteroptosis—but that of Bouchard—the pathogenic importance of dilatation of the stomach."

While not maintaining that the stomach is always responsible for neurasthenia, yet with most of these observations I am in perfect accord, convinced by many such cases as those herewith reported, and including all except those numbered I, II, IV, V, XI, and XII.

Neurologists have long been alive to the importance of attending to the primary digestion in epilepsy. I report two of several cases of epileptiform convulsions that I have seen relieved by treatment of the stomach, and in none of these were dyspeptic symptoms complained of.

The first case is of unusual interest.

G. N., twelve years old, was the only daughter of healthy parents. A cousin of her father was epileptic; a cousin of her mother was insane. The family history was otherwise good. The patient had an enormous appetite, and no symptoms of indigestion save a coated tongue. She had never menstruated. The urine was normal. In September, 1890, during the night, she had her first seizure. There was tonic followed by clonic spasm, which was succeeded by a period of coma. There was no recollection of the attack. The seizures were repeated twice before January, 1891.

Examination showed no physical defect, save gastrectasis and slight hypermetropia (O. D. = 20/XVIII. O. S. = 20/XVIII).

The equilibrium of the ocular muscles was normal. The ophthalmoscope indicated emmetropia. Correcting glasses afforded no relief.

The voracious appetite led to an investigation of the digestive tract. On February 23, 1891, after a test meal, I withdrew the stomach-contents. There were found present berries taken the day before, bread taken eight hours before, an abundance of ropy mucus, and free hydrochloric acid. A restricted diet and lavage secured immediate relief. Treatment was continued until May. From this time the patient seemed perfectly well; the stomach was much smaller; the appetite was natural; and there were no convulsions. One year later the patient was reported well, with no return of her trouble.

The second case occurred in a young woman (Case I). I have seen men similarly affected and relieved.

As to naso-pharyngeal and tracheo-bronchial catarrh, associated with and frequently dependent upon gastric disturbances, the cases are so numerous that they no longer excite special interest. To Dr. F. Whitehill Hinkel I owe thanks for opportunity to study in this direction. One case only is reported, although the list might be made long.

Mr. L., a merchant, forty-five years old, had suffered from catarrh of the upper air-passages for years; he vomited a quantity of mucus each morning; he also had acne rosacea. Local treatment afforded relief, but not cure. Examination of the stomach contents revealed an excess of free hydrochloric acid, with pronounced gastric catarrh. Appropriate diet and treatment relieved all the symptoms. There was sufficient emphysema to keep up gastric congestion. Indiscretion in diet re-established the gastric disturbance, with a renewal of the trouble in the upper air-passages.

The well-known relation existing between asthma (Case IV) and the state of digestion forbids more than mention of the matter here, but the dyspnea attending certain cardiac disturbances in which there may be also incompetency of the kidneys is, to a great extent, dependent upon gastro-intestinal infection, as demonstrated by Huchard and his assistant, Tournier (*Le Bull. Médical*, No. 19, 1892).

As to the causation of headache, it would seem that we should ascribe a larger proportion of cases to the stomach. One is too likely to turn away from this inquiry after having heard that there are no gastric symptoms, when in fact some of the most intractable cases of indigestion conceal themselves behind symptoms referred to remote parts. This is well shown by Westphalen,[1] and also by my own cases reported (Cases II, III, V, VIII, and XV).

Similar statements apply to habitual insomnia (see Cases V, VI, VII, XV, and XVI), and also to grave and mild forms of anemia (see Cases X and XII), a matter that has the support of Pick,[2] of Nothnagel's clinic.

Of late, few subjects in medicine have attracted greater interest than the nature of certain arthropathies. The matter is introduced here because there is reason to believe that, since the joint-troubles of rheumatism, gout, gonorrhea, and scarlatina, not to mention more, depend upon special forms of toxemia, so may still other joint-troubles depend upon toxemiæ not yet so clearly specialized.

Dr. Edward Blake, of London (*Amer. Journal of the Med. Sciences*, 1892, No. 2), reports instances of rheumatoid arthritis depending among other things upon oral sepsis occasioned by a faulty plate of artificial teeth. I have seen a case relieved completely by removal of old fangs and correction of a disturbing plate.

Years ago, Bouchard directed attention to certain nodules appearing upon the phalangeal joints of the hands in victims of dilated stomach. The importance given this matter in Paris may be estimated by

[1] Berlin. klin. Wochenschrift, 1891, No. 37.
[2] Wiener klin. Wochenschrift, 1891, No. 50.

the discussion reported in *Le Bulletin Médical*, 1892, No. 23.

Certainly these joint-troubles are extremely common in chronic dyspeptics, and while they are sometimes found when no symptoms of indigestion are discovered, there is reason for the belief that in these cases the joint-affections depend upon gastric trouble that is past or unrevealed. Pseudo-rheumatisms of infectious origin are seen to be common when searched for, and not rarely, in my opinion, they are gastro-intestinal in source.

The following case is interesting in this connection:

Mrs. H., aged thirty-three years, had always suffered from languor, loss of flesh, and diminished power of endurance. Two years ago, she suffered from what was called an appendicitis. From this she was restored to her usual health. Her blood was found lacking 50 per cent. in hemoglobin. She complained that for years she had experienced fugitive pains in her joints, particularly in the knees, and for several months forced flexion of these joints had been attended with a sensation of crepitation, which not only could be felt, but heard at considerable distance. These joints were somewhat enlarged. Recently the joints of the upper extremities had become stiff, swollen, and moderately painful, especially when moved. The woman's appetite was excellent, and she stated that she had never had the slightest trouble with digestion, although her bowels were not active. The urine showed an abundance of calcium oxalate crystals, but was otherwise negative. Searching for the cause of her anemia, the stomach was found to be too large, and there was marked clapotage. Although vague, there was sufficient evidence of gastro-intestinal disturbance to justify investigation. Accordingly, lavage was practised three hours after a test-meal, and the stomach found to contain no food; but there was present lactic acid in considerable quantity. The intervals between the meals and the aspirations of the stomach were now progressively shortened, but the result was the same until at last, thirty minutes after eating a hearty luncheon, all the food was found present, with an abundance of lactic, but with no hydrochloric acid. It was now determined to administer hydrochloric acid; 1.50 grams of dilute acid, in divided doses, were given after each meal; and gastric faradization was employed.

Immediately thereafter, food was found present; the digestion was slow, but still no hydrochloric acid was discovered. The patient, however, was promptly relieved in every way; the pains ceased, the stiffness of joints disappeared, and there was the most surprising improvement in her appearance. She gained four pounds in weight, her color returned, the bowels became regular, and she declared that she had not felt so well in five years. This state continued for some weeks, but then elapsed a week without treatment, during which the patient had an experience that fatigued her mentally, and she reported that her symptoms had all returned; there were languor and depression of spirits; the joints were again painful and stiff. Naturally, I prophesied that her stomach would be found empty again, and upon examination this proved to be the case; moreover, the lactic acid that had disappeared was again present in quantity.

This case is still progressing and under treatment, but its history is certainly instructive in the highest degree.

A tabular statement of the examinations is introduced here for convenient study:

Date.	Period after meal.	State of stomach and its contents.	Lactic acid.	Hydrochloric acid.
Feb. 29	3 hours	Empty	Present	Absent
March 2	4 hours	"	Present	Absent
March 4	2 h. 30 m.	"	Present	Absent
March 8	2 hours	"	Present	Absent
March 12	30 min.	All food present undigested; general meal.	Present	Absent
March 14	1 hour	Practically empty. Prescribed hydrochloric acid and gastric faradization.	Present	Absent
March 16	1 h. 15 m.	Food present.	Present	Absent
March 19	1 h. 25 m.	Food present.	Present	Absent
March 21	1 h. 15 m.	Food all present. Feels much better. Joint-pains gone	Present	Absent
March 25	4 hours	Food all present. Is better.	Present	Absent
March 28	3 h. 30 m.	Much food present. Has not felt so well in years.	Absent	Absent
April 5	2 h. 30 m.	Food present.	Absent	Absent
April 7	2 hours	Food present.	Absent	Absent
April 25	3 h. 45 m.	Empty. Pain and swelling returned. Feels badly.	Present	Absent

What impresses me most is the frequency with which patients present themselves for relief of anemia, asthma, headache, insomnia, diarrhea, constipation, muddy skin, and irritable kidneys, who make little or no complaint of the stomach, and yet whose troubles arise primarily from the stomach, and who can be relieved by treatment directed to that organ only.

The relations existing between disturbances of the digestive tract and the chronic diseases of those great eliminative organs, the lungs, the liver, and the kidneys, have not received that attention that the future will declare to be imperative. Literature now bristles with contributions thus directed, and in appreciating that the microörganisms that invade our bodies are pathogenic in proportion to the toxines that they develop, we are coming to perceive that very many morbid states hitherto misconceived, and sometimes misnamed, are merely results of auto-intoxication; that the excretory organs that so generally fail and decay would not thus suffer but for the unnecessary strain imposed upon them through the mischief arising in the gastro-intestinal tract.

REPORT OF CASES.

CASE I.—Miss B., aged twenty-five years, had for many years been weak and listless, and had convulsive seizures of an epileptiform character. She had slight astigmatism, which was corrected without benefit to the general health. She complained chiefly of attacks of unconsciousness. Examination disclosed gastrectasia, with excess of hydrochloric acid, catarrh, and variable digestion. Treatment by lavage and the direct application of the interrupted current, with suitable diet and gastric medication, resulted in the disappearance of the convulsions and the restoration of the general health.

CASE II.—Miss R., aged twenty-one years, had severe, frequent, and persistent headache that nothing relieved. Examination of the stomach revealed decided gastrectasia, with hyper-hydrochloric acid secretion. Treatment by lavage and the direct interrupted current for several months, together with proper diet and but little medication, resulted in a cure.

CASE III.—Mrs. G., aged twenty-eight years, had aggravated headaches, vertical and occipital, for many months. Meeting people, conversation, or reading gave her great distress. She was intensely nervous and weak. The eyes had been properly examined and corrected. The pelvic organs were sound. She had tried many things in a search for relief, but without success. Disturbance of vision accompanied the headaches. She complained of slight dyspepsia. Examination disclosed the existence of a dilated stomach—the lower border reaching about four inches below the umbilicus—catarrh, hypo-hydrochloric acid secretion, slow digestion, fermentation, and constipation. Treatment by lavage and the direct interrupted current for some months brought about relief from the headaches and disturbed vision, with quite marked improvement in the general health. The lower border of the stomach rose to the level of the umbilicus, and the patient considers herself well.

CASE IV.—Miss N., aged thirty-three years, complained of flatulency, gastric distress, eructations, and attacks of dyspnea that she called asthma. These last were accompanied by regurgitation of mucus from the esophagus, and a mucous discharge from the trachea, lasting only two or three hours. The paroxysms were sometimes intense and accompanied with great circulatory disturbance. The pulse in the intervals was slow and hard, the left ventricle undergoing hypertrophy. There were also areas of superficial anesthesia. Examination of the stomach revealed gastric hypotony, hypo-hydrochloric acid secretion, and catarrh. Treatment by lavage, restricted diet, predigested foods, and assafetida resulted in cure. She has recently had a recurrence.

CASE V.—Captain B., aged forty-eight years, formerly a shipmaster, now an agent, from leading a sedentary life has suffered from insomnia, with headache and nervous irritability. He has had belching of gas and sour stomach. Examination revealed a somewhat dilated stomach, with slow digestion and fermentation. He was treated by means of lavage and gastric antiseptics. His insomnia was immediately relieved. He improved steadily and completed his recovery by a transatlantic voyage.

CASE VI.—Mr. W., aged fifty-five years, had gastrectasia with hyper-hydrochloric acid secretion and phosphaturia. He was reduced in flesh and strength, had cardiac palpitation, mental restlessness, persistent insomnia, gastric uneasiness, and melancholia with delusions. Treatment by lavage and the faradic current applied directly resulted in marked amelioration of the symptoms and great improvement in sleep. The man was under treatment for three months, after which he was able to return to business; and although not well, his mind was sound and he was every way much better.

CASE VII.—Mrs. W. A., aged thirty-six years, suffered from pain in the left hypochondrium, disturbed sleep, inability to sustain mental or physical effort, and debility. She has a wandering left kidney. She had gastric distress, with fermentation and eructations of gas, but no vomiting. The urine at first showed excess of acid, later an excess of phosphates. Examination of the stomach showed great irregularity in digestive strength and secretions, with extensive catarrh. Digestion was usually slow. There was hypotony. She was treated by means of lavage and the faradic current, sometimes the continuous current. Improvement in the general condition was in ratio to the improvement in the gastric state. She was discharged after four months, improved, but not cured.

CASE VIII.—Miss H. R., aged twenty-one years, has suffered for two years from general debility, occipital headache, depression of spirits, and inability to work. Upon two occasions she has spat blood. The case had been considered tuberculous. No bacilli were found in the sputum. She had few symptoms of gastric disturbance. Examination revealed extensive dilatation, with irregularity of the secretions. Treatment by lavage and gastric faradization was continued for six months, resulting, after a sojourn of two months in the mountains, in a complete cure. She gained fourteen pounds in weight, and particularly showed improvement in the nervous system and in her power of endurance.

CASE IX.—Miss D., aged eighteen years, a farmer's daughter, has suffered for three years from general neurasthenia with headache, fainting spells, and inability to exercise even slightly. She spent most of her time in bed and was despondent, fretful, and peevish. The urine contained an excess of lithic acid and lithates. The bowels were constipated; the skin discolored. The girl regurgitated food, belched gas, and had pyrosis and nausea. Examination showed the stomach to be slightly dilated, and usually with an excess of hydrochloric acid. Lavage was employed for several months, and occasionally the continuous current. She was placed upon an albuminoid diet and occasionally given predigested milk; later, the diet was made more general and tonics were administered. Her improvement began with the advance in her digestive power. After four months she was discharged much improved and has continued gaining during the past year.

CASE X.—Miss B. C., aged twenty-eight years,

suffered from depression of spirits, mental and physical prostration, and profound anemia (the blood contained only 40 per cent. of hemoglobin). She suffered from gastric distress. Examination showed the lower border of the stomach to be four inches below the umbilicus; there were fermentation and extensive gastric catarrh. She was treated by Dr. Allen A. Jones for five months by means of lavage and the faradic current at night. Her stomach returned to its normal size, and digestion became satisfactory. The patient was discharged, recovered, with a disappearance of the nervous symptoms.

CASE XI.—Mrs. D., aged forty years, complained of occipital headaches, with attacks of vomiting, that would last for several days, and were accompanied with great prostration. There was gastrectasis; the lower border of the stomach extended four inches below the umbilicus. There were some catarrh and hypotony (hydrochloric acid was deficient). The woman was treated by means of lavage and internal faradization for three months. There was great improvement in every way, which has continued since the cessation of treatment.

CASE XII.—Mrs. C. B. G., aged twenty-six years, suffers from weakness, anemia, bronzed skin, with occasional chills, followed by elevation of temperature, lasting for several days. She has moderate gastric dilatation and poor and slow digestion, with hypotony. There is an absence of hydrochloric acid and sometimes an excess of lactic and fatty acids. Treatment by lavage, faradization, hydrochloric acid and other digestants, and nux vomica and physostigma, was instituted. Great improvement followed. After two months the patient was sent to Florida and returned well.

CASE XIII.—Mrs. G. S., aged twenty-six years, manifested a condition of neurasthenia, with gastric pain, nausea, and gas. Examination revealed a great excess of hydrochloric acid, with slow digestion of carbo-hydrates. Treatment by diet and antacids, as governed by the examination of the stomach-contents, was adopted. The patient was discharged after six months and is now well, although not particularly strong.

CASE XIV.—Miss E. W., aged twenty-two years, who has a neurotic family history, complains of great fatigue, made worse by mental exertion. She also has headache, and complains of burning in the epigastrium. She was found to have most marked dilatation, with very slow digestion and great excess of hydrochloric acid and some catarrh. She has been under treatment for six months, and has improved, but is not well. She is benefited by strontium bromide and other gastric sedatives. The diet can be regulated only after examination of stomach-contents. The condition is improved by lavage.

CASE XV.—Mrs. S. S., aged twenty-five years, belongs to a family of neurotics, one sister being a complete wreck from neurasthenia. The patient suffers from weakness, insomnia, headache, inability to sustain efforts of any kind, and backache. She is disturbed by light and by sound. She has a stomach of irregular size, sometimes found two or three inches below the umbilicus, while sometimes it is of proper size. The gastric secretions are also irregular. Digestion is sometimes rapid, sometimes slow. After treatment by lavage, electricity, and rest, the improvement in the state of the stomach was rapid and evident, and this was followed by improvement in the general condition. She is now progressing favorably.

CASE XVI.—Miss S., aged forty-two years, has suffered from dyspepsia since she was twenty. She has had two attacks of "exhaustion." She has also had typhoid fever. For the past ten years she has suffered from neurasthenia, showing itself in insomnia, occipital headache, weakness of vision, cold hands and feet, inability to sustain mental or physical efforts, and constipation. Examination shows the stomach to be moderately dilated, digestion to be slow, and accompanied with fermentation and gas. Hydrochloric acid is absent. After treatment by lavage, electricity, diet, and purgatives for three months, the woman was discharged well.

THE TREATMENT OF TYPHOID FEVER BY COLD BATHS.[1]

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ON looking over the proceedings of this Association since its commencement, I saw that, as yet, the cold-bath treatment of typhoid fever had not been brought prominently before it. This I considered a sufficient reason for now bringing up the subject on the small number of cases that I have had to report, and of eliciting the views of this Association on such an important subject.

The advantages of the application of cold water have been very ably treated of by Dr. Porcher, at our first meeting, but my success in the use of cold baths has so convinced me of their superiority, in suitable cases, over all other methods, that I feel it my duty to add my testimony to that of many others who have, with such forcible arguments in their favor, advocated this method of treatment.

I am quite well aware that many members of this Association are as ardent supporters of the use of the cold bath as I am; several I know have so expressed themselves at previous meetings, and they have had greater experience in its application; indeed, it was owing to the very enthusiastic manner in which Dr. J. C. Wilson spoke of it to me, and the recorded history of his cases that I saw at Philadelphia, that determined me to give it a trial.

I feel quite satisfied that, as a result of that trial, I have saved some lives that I fear I could not have saved with any other treatment. I form this opinion partly from the average mortality from the use of the

[1] Read at the meeting of the Association of American Physicians, held in Washington, D. C., May 24, 25, and 26, 1892.

other most successful methods of treatment, as well as from the individual characteristics of some of the very bad cases that yielded to the cold-bath treatment. The total number of cases upon which this paper is founded is thirty-nine,[1] with two deaths. Of this number, seventeen were under the care of my colleague, Dr. Stewart, who has kindly permitted me to make use of them, and who, I may say, is quite as warm an advocate of the baths as I am.

There are very few physicians, I think, who carry out this treatment properly, who would feel justified in relying upon any other, especially in serious cases, unless certain contra-indications are present. Yet we see that in England—which may justly be called the birthplace of the cold-bath treatment—there are very few physicians who systematically make use of it. It is over one hundred years since Currie so strongly advocated its use there. It evidently died with him, as we have no record of its continuance. As almost every medical student knows, it is to the teachings of Liebermeister, Ziemssen, and Brand, especially the latter, that we are indebted for its re-introduction into therapeutics.

Liebermeister suggested that written instructions should be given to the nurse, as follows: A bath is to be given if the temperature is 104° or above, between 7 P.M. and 11 P.M.; if 103° or above, between 12 M. and 3 A.M.; if 102° or above, between 4 A.M. and 7 A.M. He advises that the temperature be taken about every two hours in the night-time, and sometimes even more frequently. During the day-time he seldom orders the bath unless the temperature rises above 105°. In cases in which the cold bath fails to reduce the temperature, or in which contra-indications exist, he administers antipyretics.

Brand advises the bath to be given whenever the rectal temperature reaches 102.2°, without regard to the time of day. He advises placing the patient in water at a temperature of 68°, keeping him there for fifteen minutes, making cold applications to the head, and using friction over the body. At Lyons this treatment of typhoid fever seems very popular, both in hospital and private practice. Bouveret, one of the hospital staff there, suggests trying the bath with the water at a higher temperature, say from 80° to 85°, and, if that is not successful, using the colder bath of Brand. By this method of treatment, and the occasional use of antipyretics, he has been able to reduce the mortality to 7.3 per cent.

Dr. Hare, of Brisbane Hospital, who seems to have had a very large number of cases, by adhering strictly to Brand's rules, in one report of 1173 cases has had a mortality of 7.8 per cent.[1]

During the first six months in which I made use of the cold baths I adopted Liebermeister's method. Since then I have adhered to Brand's method, with slight modifications. In the first place, I very seldom keep the patient in the bath longer than ten or twelve minutes, and place him there only when the temperature in the mouth reaches 102.6°. Secondly, if the patient comes under my care late in the disease, or if there are any marked symptoms of weak heart, I place him in a bath of 80°, and lower the temperature with ice to 68°.

In the cases in which I make use of the bath I proceed as follows: With respect to hospital practice, as I very seldom have more than two or three patients at a time requiring bath-treatment, I have one bath-tub filled for each patient, the same water, as a rule, being good for twenty-four hours. The bath-tub is wheeled alongside the patient's bed and kept there, a rubber air-pillow being placed in it to support the patient's head. Ordinary bathing-trunks are placed on him, and in most cases he is lifted into the tub. It has so happened that we have had patients weighing over two hundred pounds requiring this treatment, and necessity has compelled us to allow them to assist in getting into the bath. Whilst in it, cold-water compresses are placed on, or the water is poured over, the head, and at the same time another assistant applies friction to the surface of the body. Sometimes, while in the bath or just before it, from half an ounce to an ounce of whiskey is given in either milk or water. The patient is kept in the water a length of time corresponding to the fall of the temperature, as after he is in the bath five minutes the temperature is taken. If the temperature falls rapidly, he is taken out as soon as that is observed.

In the thirty-ninth case, already referred to, the temperature, on one occasion, within the five minutes, fell from 103° to 97.4°. Of course, he was removed at once. In another case—that of a fat woman weighing over two hundred pounds—the cold bath seemed to have very little effect, even a bath of twenty minutes' duration; this she had several times, the temperature falling less than one degree, until after she had received eight or nine baths, when it fell two or more degrees on each occasion. This woman was one of the rare cases in which a patient seemed really to enjoy the bath treatment. Although the temperature in the early stage of the disease fell only a fraction of a degree, she always expressed herself as feeling much better.

When the patient is considered to have been sufficiently long in the bath, he is lifted out and placed on a dry blanket, and his trunks removed;

[1] The thirty-ninth case, which was fatal, occurred after I had commenced the preparation of this paper.

[1] Practitioner, March, 1891, p. 170.

he is covered up and left for half an hour, when he is wiped dry and his temperature taken. This is almost always found to be from two to four degrees below what it was previously to the bath. The exceptions to the rule are very rare; in only two cases of the thirty-nine considered in this paper did such a reduction fail to occur. Of this number twenty-one were treated by placing the patient in water at a temperature of 68°; in the other cases the temperature of the water was 80°, reduced to 68° whilst the patient was in the bath.

The immediate effect of the bath was an average reduction of temperature of 1° in one case; of about 2° in two cases; of between 2° and 3° in nine cases; of between 3° and 4° in twenty-six cases; and of over 4° in one case. The last case was one in which the patient came under my care with a badly damaged heart and a dicrotic pulse, on the sixteenth day of the fever. He had but seven baths, all of short duration. The pulse seemed to improve slightly, notwithstanding which he died of syncope on the seventh day after admission. In 95 per cent. of the occasions on which the bath was used, the pulse fell within half an hour after the patient was removed from the bath, sometimes only two or three beats, but usually more, on some occasions as many as eighteen beats.

Unfortunately, I have not been able to get a reliable record of the amount of sleep in most of the cases or of the amount of urine secreted; but, whether the patient slept or not, the almost universal rule was that he rested quietly when previously he had been restless; and, in those cases in which notes had been taken regarding sleep, it was found that in most of them there had been sound and refreshing sleep, probably of short duration, but always invigorating.

In those cases in which, according to the rules, the baths were stopped on account of the fever temperature not being sufficiently high to require bathing, the patients very rarely rested as well, notwithstanding that sponging with cold water was made use of. In the nurses' notes of the progress of these cases a common observation is: "Patient not resting quite so well," and it is also a point to which they have frequently drawn my attention.

Although the refreshing effects of the bath are usually present, it is very rare indeed to find any patients who like the treatment. They often object—sometimes very vigorously. That occurred twice last summer. One of the cases was that of a man whose temperature kept very high, requiring numerous baths. He had seventeen in three days. On one of these days the temperature was several times over 104°, so that he had eight baths during one space of twenty-four hours. On each occasion the temperature was brought down to between 100° and 101°. After fourteen out of the seventeen baths he had a refreshing sleep varying in time from half an hour to two hours and a half. Notwithstanding this, he commenced to object at about the fourteenth bath, and during the time that the seventeenth bath was given him he growled and complained so bitterly and with so much noise that I was obliged to order the bathing to be stopped and to substitute sponging. Even to this he objected. After the discontinuance, he still continued to improve. His temperature only touched normal on the nineteenth day after the last bath. During the whole of this time he was much more restless than while having the baths. Another patient, who was delirious, resisted the first bath so violently that it was not attempted again. Both of these cases did well.

The only fatal case that I have had so far, besides the one referred to in the earlier part of this paper, was that of a man twenty-one years of age, who was said to have been ill only four days previously to entering the hospital, but who must have been ill for a longer time. There was then found to be present double broncho-pneumonia with albuminuria. Both pulse and respiration were very rapid. Nervous symptoms early made their appearance. Twenty-four hours after admission the man was delirious, and twelve hours later subsultus tendinum was present. The temperature, which was 104.4°, was brought down to 103° by the bath, but rapidly rose again. The baths were repeated on seven different occasions during four days without much apparent relief. The patient died on the fourth day.

I have been rather skeptical about the possibility of aborting a case of typhoid fever. Even yet, I am not convinced that such a thing can be done, but in a family in which I had three other well-marked cases, during my absence from town one child—at that time the second case—became ill with fever, headache, diarrhea, etc. The father of the child, to whom I had related my success in the use of cold water in hospital practice, and as I had been contemplating its use in the first case, took upon himself the responsibility of putting into practice in his family the method of which I had been speaking to him. This he did with the consent of the physician temporarily in attendance. He adhered strictly to the rules of Brand, with the result of complete subsidence of the fever in seven days. The development of two other cases in the same family, all of which had been subjected to the same source of infection—well-water in a country place—considerably strengthened my suspicions of this so-called aborted case being also one of typhoid fever. The three other cases averaged about six weeks' illness each, although they all had baths—the one that had most baths having had two serious and prolonged relapses.

So far, the greatest number of baths that I have given any one patient is thirty-five. This was in the case of a child nine years old. The entire number were given within ten days. In one period of twenty-four hours eight baths were made use of. The child used to sleep tranquilly nearly the whole time between the baths, but when his temperature fell below the standard requiring them he was much more restless.

I have not yet adopted the routine of treating every case of typhoid fever by cold baths. During the period in which these thirty-nine cases were treated I had nine others of a mild type under my care, the temperature not being persistently high; these were successfully treated on the expectant plan. I am not yet convinced of the advisability of treating every case of typhoid fever with cold baths, although last summer I had one case that for the first fourteen days appeared to be one of the mildest type, and subsequently proved one of the most serious under my care, except that she ultimately recovered. I believe now that had I used the cold baths in her case the serious symptoms might have been averted. When they appeared it was with the contra-indications of the bath. The case was that of a girl, nineteen years of age, whose temperature for the first fourteen days never rose above 102.2°, the lowest limit requiring the bath. There were no indications of any serious disturbance of the digestive tract. Her general condition was remarkably good in every respect, until the appearance of an alarming hemorrhage on the fifteenth day. After this time the temperature rose considerably above the bath-limit, at times reaching 104°, being associated with a weak and rapid pulse, and also several subsequent alarming hemorrhages. With this condition it was now too late to commence the bath-treatment. Nervous symptoms subsequently became a prominent feature in her case. Paralysis of the pillars of the pharynx, paresis of both lower limbs, and loss of the deep reflexes were observed. In the eighth week her symptoms, in many respects, resembled the pareses following diphtheria. It was only after the tenth week of the fever that these symptoms began to improve. As already stated, it is more than possible that the cold-bath treatment in this at first mild case might have so modified the nutrition of the ulcerated patches as to have prevented the hemorrhages.

The question naturally arises, How is the tendency to hemorrhage affected by the cold bath?

Hare, to whom I have already referred, who has written a very instructive and now well-known article in the *Practitioner*, states that, in the large number of cases (1173) in which he made use of the cold bath, while the actual mortality from hemorrhage was somewhat less than that of those treated on the expectant plan, the occurrence of hemorrhage was "as frequent (though not more so) under the bath-treatment." The experience of most of the German authorities is somewhat more favorable, as with them the occurrence of hemorrhage has been less frequent. Theoretically, it seems to me that it ought to be so. We know that fever always interferes with the processes of nutrition and repair in all the organs of the body—in some it causes actual waste, while in others it simply modifies their functions. The capability to resist the bacillary invasion of the bacilli of typhoid fever and the consequent sloughing of portions of the affected areas in the bowel is seriously impaired by the high temperature. When we lower the temperature, although we do not destroy the bacilli, which may have been actively at work in the earlier stages of the disease, we place the affected areas of the bowel in a much better condition to resist the effects of extensive sloughing. When the nutritive processes are not embarrassed by the abnormal temperature, the defensive struggle of the tissues against the bacilli is more effectual, and the bacilli, although probably gaining ground during the first few days, do so only by a truly ulcerative process—*i. e.*, molecular necrosis—in which *vis medicatrix naturæ* manifests itself by protecting with granulation-tissue the elements in the immediate vicinity of the ulcer.

To put my meaning in fewer words: With continued high temperature we should expect larger sloughs, with exposure of vessels; with intermittent elevations of temperature the necrosis is molecular, and the vessels stand a better chance of being protected by granulation-tissue. The cold bath almost invariably reduces the temperature from two to four degrees; this reduction frequently means a normal temperature. In that case we produce an intermittent fever. True, this intermission is usually of but short duration, but the more perfectly intermittent we cause the fever to be, so far as temperature is concerned, the less likely are the secondary effects of the fever, which constitute the real danger, to make their appearance. Continued high temperature, as is well known, besides causing degenerative changes in the heart and voluntary muscles, affects also the parenchyma of the glandular organs.

Nor does the central nervous system escape being profoundly affected by these high temperatures. We have ample evidences of this by the continuous headache, stupor, delirium, and, what is of even greater significance than these, the blunted sensibility of the various reflex nerve-centers. In some of these conditions time is all-important. Two or three hours less of a high temperature constitute an enormous saving to the patient. We all know that three or four hours' duration of a temperature of, say, 104° or over, has a much more serious effect than a temperature of, say, two degrees lower lasting three or four times as long. Here we see the markedly beneficial effect

of the cold bath. Frequently have I seen a patient with a temperature of 104°, with a dull, heavy expression, dry and brown tongue, weak heart and rapid pulse, and with slightly increased frequency of respiration, after a bath of 68°, resting quietly in sound, natural sleep, with a temperature reduced to 99°, and a pulse nearly always reduced in frequency, often as many as fifteen beats, and also increased in volume. Of course, the temperature will rise again, sometimes shortly and at other times after a longer duration, but the patient has had an interval of rest that is of inestimable advantage to him. Now there is no other remedy with which I am acquainted that will produce such an improvement in all of the symptoms. True, many of the antipyretics will reduce the temperature quite as much as the bath, but none of them will do so as rapidly and as certainly. The use of all is attended with some more or less objectionable features.

My experience has been that almost invariably the patients sleep for a short time after the bath. If not sleeping, they are quietly resting. One of our graduates of this year, who had typhoid fever last January and was under the care of my colleague Dr. Stewart, was treated both with phenacetin and other antipyretic drugs and the cold baths, at different times, and is most enthusiastic in speaking of the soothing effect following the bath. Like most patients, he dreaded the bath on account of its immediate effect, but says that there is no comparison between the after-effects of the two methods of treatment. He says that phenacetin, whilst reducing the temperature sometimes as much as the bath, did not give as much relief, nor did he experience as much relief from restlessness and anxiety. He found the bath decidedly refreshing and invigorating.

It is a popular belief amongst the laity, in which I fear many physicians shared until very recent years, that the cold bath tends to produce mischief in the respiratory apparatus, *i. e.*, the patient will "take cold." As most of us now know, quite the reverse is the case. Liebermeister draws particular attention to his experience in this respect. With him, in the cold-bath treatment, the percentage of cases presenting respiratory complications was much less than in any other method of treatment, while *the mortality* among those with pulmonary complication was also much lower than usual. Dr. Hare's experience was still more favorable than that recorded by Liebermeister. Fatal cases occurred with him in only one-fourth of the number of those fatal under treatment by the so-called expectant method, which included cold sponging and the occasional administration of antipyretics. These different results may be accounted for by the slightly different methods of treatment. Hare followed strictly the rules laid down by Brand, whereas Liebermeister adhered to the method mentioned in the early part of this paper. In the commencement of my cold-bath treatment I followed the suggestions of Liebermeister, but since then I have adhered more closely to Brand's instructions, with apparently better success.

In the early part of last month a patient was brought into hospital under my care, apparently on about the eighteenth day of the disease, suffering from diarrhea and a slight cough. His tongue was very dry and brown; his pulse was weak and rapid; and he had broncho-pneumonia affecting both lungs; there was marked dulness behind in the left infra-scapular region; the urine was diminished in amount and contained a large proportion of albumin. I rather dreaded trying the bath-treatment, and for four days tried quinine, phenacetin, and salol, with free use of stimulants. Notwithstanding this, the temperature continued to rise, the urine to diminish in quantity, and the physical evidence of lung-complications to increase. The combination of these three symptoms, with the absence of cough corresponding to the extent of lesion, determined me to try the cold or rather cool bath. I had the patient placed in water at a temperature of 80° and reduced with ice to 68°. Whilst in the bath, friction was used. Placing him in the water at once started vigorous coughing, with free expectoration. His temperature fell to 99°, the pulse-rate to 88. This treatment was repeated every time the temperature rose to 102.4°, with the result that the amount of urine was increased in twenty-four hours from twelve ounces to twenty-four in the first twenty-four hours, and to thirty-eight on the following day—more than double what it had been during the previous six days he was in hospital. The albumin diminished in quantity. The lung-symptoms at once commenced to improve. Gradually the bronchi became emptied of the mucus and the air-vesicles cleared up rapidly. The tongue commenced to lose its glazed appearance. After the sixth bath the temperature kept below 102°, and within ten days he began to convalesce and is now well.

In this case during the four days that the patient was in the hospital before the bath-treatment was commenced, his temperature never went below 101.8°, nor was his pulse-rate below 100, although he was sponged every four hours. A detailed statement of the effect of the few baths he had may be of interest, and may be taken as an example of their effects in nearly all the other cases:

Before bath.	Temp.	Resp.	Pulse.	Duration of bath.	30 minutes after bath.		
					Temp.	Resp.	Pulse.
				min.			
April 11, 6 P.M.	103.4°	24	112	13	99°	28	88
8 P.M.	105.2	32	124	12	101	28	94
April 12, 11 A.M.	102.8	32	108	12	98.2	28	108
2 P.M.	103.8	34	124	10	100.2	32	108
6 P.M.	102.8	30	110	10	99	26	92
8 P.M.	103.0	28	110	11	98.3	24	90

During the following ten days the temperature kept below 102.4°, hence sponge-baths only were required. The temperature remained normal after the tenth day.

Whilst writing these notes (May 12th) I have convalescing a case of pneumonia treated only by cold baths. I may be excused mentioning it here, as I think it has a direct bearing on the benefits of the bath in high temperature from any cause.

The patient, a young man, came under my care two days after the initial rigor, and when I saw him first his temperature was over 104°. I will refer to the bath-treatment so far only as the fever, respiration, and pulse-rate are concerned.

Before bath.	Temp.	Resp.	Pulse.	Duration of bath.	30 minutes after bath.		
					Temp.	Resp.	Pulse.
				min.			
May 7, 2.30 P.M.	104.2°	32	100	12	99°	24	84
May 8, 9.30 A.M.	104	36	116	11	99.4	32	88
2 P.M.	104.8	40	100	12	100.5	26	88
6 P.M.	104	28	120	12	99.8	28	78
May 9, 10.15 A.M.	104	30	100	12	99.8	26	90
May 10, 6 P.M.	104	32	92	13	98	26	78

No more baths were given after this, as the crisis occurred on the following morning, with improvement in all the physical signs.

To quite understand the rationale of these events we must consider the cause of the respiratory troubles in typhoid fever. This is not very far to seek in the weak heart, which may produce very varied conditions. That the central nervous system is affected we have ample evidence. Amongst others, the activity of the vasomotor system is impaired. The degenerating heart-muscle pumps blood with enfeebled power into both systems. The impaired vasomotor activity manifests itself in the lungs in a two-fold manner. It affects both the bronchial and pulmonary vessels; the blood circulates slowly in the relaxed vessels. In the bronchial arteries we have evidence of this sluggish movement of the blood in the catarrhal condition of the bronchi and bronchioles, as a result of which they may ultimately become choked up. A blunted sensibility of the nervous system, with probably weak respiratory muscles, prevents mucus being expectorated, with a resulting collapse of that portion of the lung; or, the right side of the heart may be at fault, with a resulting congested state of the branches of the pulmonary vessels in the alveoli of the lungs, developing probably a fatal pneumonia. Usually, both sides of the heart are involved in the respiratory troubles, producing a more or less complete broncho-pneumonia. Now, as was shown in the case I have just related, and in many somewhat similar cases, the bath, instead of being injurious, is especially suitable. The contact with the cold water invariably produces deep respirations, thus avoiding the tendency to collapse of the lung.

Coughing is induced, the mucous plugs are expectorated, and the over-strained heart is relieved; and, what is more, the heart itself is directly stimulated. These facts I consider as of great importance in showing how closely the nerve-centers are related to many of the more serious symptoms present in the fever. There can be no doubt but that high temperatures alone seriously impair the nutrition of the centers; hence the serious complication just named.

That the cold bath has a local cooling effect is self-evident. That local effect is soon transmitted to the internal organs, as after the first effect of contact with the cold medium the vessels that were contracted become widely dilated, and expose much more of the blood to the cooling influence of the water. The effect of the application of the cold water to the surface of the body is observed in another way. As is well known to every one, as just stated, it causes contraction of the bloodvessels. This means a temporary increase of the blood-pressure, and thus a stimulation of the heart to increased work. As a consequence, the blood that has been lazily coursing through the internal organs, crowding the venous system and interfering with their functions, is forced to move on, thus relieving the tendency to congestion. This, I think there can be little doubt, accounts for the increase of the urinary secretion almost always observed in these cases, as was the case also in the one just related. I think we have here a very plausible explanation of the continued fall of temperature after removal from the bath. The diminished secretion of urine during the febrile state must mean retention of poisonous material in the blood, as the result of the bacillary invasion. A restoration of this secretion is probably, therefore, one of the factors in the elimination of the toxines produced by the bacilli. That typhoid fever is a complex febrile state is demonstrated by the range of temperature. In the earlier stages we have the regular rise produced by the bacillary growth, followed by the irregular temperatures, the result of absorption of the products of the bacilli, *i. e.*, the toxines produced by the suppurative micrococci that accumulate to a greater extent in proportion to the diminished secretion of urine.

With respect to contra-indications, the most important are those accidents that may arise in the course of the disease, and which require rest as one of the means of treatment. This applies to hemorrhage from the bowels and also peritonitis. A very weak heart with a dicrotic pulse will require great

caution. If there has been long-continued high temperature there is almost certain to be a degenerative condition of the muscular structure of the heart, and consequently the sudden determination of blood to that organ as the result of the first contact with the water may so embarrass it as to cause serious or alarming symptoms. These occurred in one case that, however, did well ultimately, the patient becoming unconscious in the bath, but on immediate removal being much improved by it. This patient had a number of baths subsequently, with no unpleasant results.

This paper really represents a mortality of two out of forty eight cases, of which number thirty-nine had been treated by cold baths; the remaining nine were of a milder type than those treated by the bath, except the one case in which there were hemorrhages, to which I have referred at length.

I have not attempted to go into statistics, as the number of cases that I have had is not sufficiently large to be of service, nor have I attempted to give a systematic treatment of typhoid fever. I simply wish to add my testimony to that of the many other members of this Association who on previous occasions have incidentally in their discussions advocated the employment of the cold bath or referred to its advantages.

It is a fact that cannot be denied that in about 90 per cent. of conditions of pyrexia, in which the cold bath is systematically used, it will reduce the temperature, lessen the pulse-rate and frequency of respiration, and increase the daily amount of urine secreted, besides promoting, if not actually causing, sleep.

I venture to submit that there is no other remedy in our materia medica, the use of which will as surely and as quickly yield all of these favorable and most desirable results.

MEDICAL PROGRESS.

Diabetes Mellitus of Unusual Course.—HOLSTI (*Zeitschr. f. klin. Medicin*, 1892, xx, 3, p. 272) has reported the case of a man, forty-one years old, who, two months after an attack of influenza, had a recurrence of pain in the arms and legs, and one month later suddenly began to experience great thirst, at the same time passing large quantities of urine. The urine examined a month later responded to tests for sugar. Thirty-six pounds had been lost in weight. The right lower extremity was edematous. At a subsequent examination, the urine had a specific gravity of 1039 and contained 8.8 per cent. of sugar. More than five pints was passed in twenty-four hours. The patient was directed to partake only of meat, cheese, and eggs, and to drink only carbonated waters. In the course of a few days, sugar could not be detected in the urine, although the specific gravity was yet high. The sugar did not again appear, and the specific gravity gradually became lower, although ordinary diet was again resumed.

The Therapeutic Value of Suppuration.—FOCHIER has observed that in some cases of puerperal infection, when there is no important appreciable lesion, a sudden amelioration not rarely takes place coincidently with the appearance of a focus of suppuration in the iliac fossa, in the breast, in the subcutaneous cellular tissue, or about a joint. The thought suggested itself that in suitable cases the establishment of suppuration by the subcutaneous injection of essence of turpentine might be a rational procedure; and in a number of cases, successful results were by this means obtained. Governed by the same principle, LEPINE and DIEULAFOY each employed the injections in a desperate case of pneumonia, with a fortunate termination. About fifteen minims were injected in each situation selected. Suppuration took place in the course of a few days, but it was unattended with elevation of temperature, and the pus was aseptic. —*L'Union Médicale*, No. 39, 1892, p. 465.

Scarlatiniform Erythema.—ROSSIGNEUX (*Lyon Méd.*, March 27, 1892) reports a case in which, after counter-irritation of the chest in the treatment of bronchitis, a diffuse red rash appeared, with constitutional symptoms, mild angina and fever, followed in five days by desquamation. A year later, after an application of tincture of iodine to the chest, a similar attack occurred. After the lapse of another year, symptoms of irritation appeared in the left eye, the lid became swollen, and an intense, generalized red rash, accompanied by pruritus, developed, together with malaise and headache and swelling of the tonsils. In the course of a few days desquamation took place. The condition is considered as neither scarlatina or exfoliative dermatitis, but a scarlatiniform erythema probably of rheumatic origin.—*Rev. Gén. de Clin. et de Thér.*, 1892, No. 14, p. 216.

General Symptoms from Accumulations of Cerumen in the Auditory Canal.—AITKEN (*British Medical Journal*, No. 1630, p. 652) records three interesting observations in which general symptoms disappeared after the removal of accumulations of cerumen in the auditory canal. In a little girl, eight years of age, with incessant cough, bad nights, frequent night-terrors, loss of appetite, and emaciation, without physical signs of pulmonary disease, one of the ears was found blocked with wax. In a man, eighty-one years of age, with restlessness, tremor, derangement of digestion, and deafness, the ears were found filled with large masses of hardened wax. A girl, eleven years of age, with a tuberculous family history, presented elevation of temperature, frequency and irregularity of pulse, but without other signs of organic disease. An accumulation of wax was found in the ear.

Sudden Death in Pleurisy without Effusion.—TALAMON (*La Médecine Moderne*, No. 15, 1892, p. 217) records two cases of sudden death in the course of chronic adhesive pleurisy. He maintains that while sudden death is to be feared when an effusion exists, it may take place under other conditions, and is usually dependent upon thrombosis of the pulmonary artery, in conjunction with deranged action of the right heart.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, MAY 28, 1892.

KEELEY, TALMAGE & CO. (UNLIMITED), DEALERS IN MEDICO-RELIGIOUS HUMBUG.

THERE have been many enemies of modern popular Christianity, and some have inflicted upon it powerful and grievous injury, but when the whole history shall have been written, it will be found that by no agency has it been so vitally wounded as by its present-day unholy alliance with quackery. An ancient libel upon medicine has been crystallized into an old Latin proverb, meaning that two out of every three physicians are atheists. This, of course, is a lie, because no body of men is made up of more reverent and—in a true and essential sense—religious minds, than is the medical profession.

It is a lie—but a certain class of modern religious clowns and caricatures are trying their best to make it true. If the simile may be pardoned, nothing would more effectually make a scientific mind vomit up the whole good dinner of religion than the nauseating stench of flatus so freely vented by these pseudo-religious demagogues.

For instance, we read (*New York Herald*, May 16th) as follows:

> The REV. DR. T. DE WITT TALMAGE stood on the platform of the Brooklyn Tabernacle last night with DR. LESLIE E. KEELEY, of Dwight, Ill., and helped to advertise that gentleman's institutions for the cure of drunkenness.
>
> Several members of the congregation walked out of the church before the meeting was over.
>
> DR. KEELEY, accompanied by his wife, went to Brooklyn in the afternoon, and after dining with DR. TALMAGE went to the Tabernacle. REV. DR. I. K. FUNK offered prayer, in which he called down the blessings of heaven on DR. KEELEY, who, he said, was "the glory of the nineteenth century." The congregation sang "Hold the Fort," and then DR. TALMAGE introduced the lecturer, who, he said, would live on in centuries, and would eventually drive drunkenness and morphine off the face of the earth.
>
> The lecture itself was uninteresting, and at its close DR. TALMAGE announced that he would ask DR. KEELEY a few questions that had been given to him by prominent clergymen and physicians. He read the questions from a slip of paper which he held over a hymn-book. Here are some of them:
>
> Q. Now, DR. KEELEY, tell this assembled multitude if there are any poisons in your cure.—A. There is nothing deleterious, inimical, or hurtful in my cure. A child could drink a barrel of it and it would not do any harm.
>
> Q. Does the temptation to strong drink pass away after a person has been through your treatment?—A. A man never has any desire to drink again after being treated by me. My cure destroys all desire. If he goes back to drinking he does it deliberately because he wants to lead the old life, and not because he has any desire for strong drink.
>
> Q. How many persons under GOD have you been permitted to cure?—A. Something over 60,000. Of this number, 95 per cent. have been permanently cured, and only 5 per cent. have relapsed.
>
> DR. KEELEY went on to explain, in answer to further questions by DR. TALMAGE, that no analysis had ever been made of his remedy. He said that he defied analysis, and that no chemist on earth could tell what it is. He had been experimenting for thirty years, and could cure the opium or morphine habit just as easily as the drinking habit. He added that it was a mistake to call his cure the bichloride of gold. That name was given to it erroneously because of the gold clubs that had been organized throughout the country. He insisted that bichloride of gold is a chemical impossibility.
>
> "What are your reasons for keeping your cure a secret?"
>
> "It is a system. Drunkenness must be treated systematically. We could not hand it over to the doctors, because they would not handle it properly. I look upon my cure as belonging to the women and children of the country. If I gave out the formula the quacks would destroy it in a very short time. There are only three persons in the world who know the secret, and no one else will ever know it."

We have quoted at some length from this report, and for several reasons. We wish our readers to remember carefully several points contained in it, notably these:

1. KEELEY's early advertising pamphlets and circulars expressly stated that the medicinal agent was bichloride of gold. THE MEDICAL NEWS at once (November 14, 1891) pointed out the fact that a solution of bichloride of gold is a chemical impossibility. Then the later circulars and pamphlets changed the tune to "chloride of gold and sodium." The third change of attitude is indicated in the foregoing, in the remarkable admission that a child could drink a barrel of it without injury. Now, the dullest comprehension can at once see that a medicinal agent capable of producing such profound changes in the human system as the injection is alleged to produce must, in barrel doses, be somewhat injurious to children. Reference to any work on materia medica will hardly authorize the maximum dose of any auric or aurous salt as a barrelful.

In other words, by KEELEY'S express admission, there is no gold in the injection, however much there may be in the business.

This self confessed *reductio ad absurdum* of the whole fraud will be confirmed. Suppose that a "jabber" of one of the institutes, one of the so-called physicians, should have the injecting material analyzed by an expert chemist, in order to set up a rival institute, and suppose that, as a result of that analysis, it should be found that in the injecting material used in the KEELEY institutes there is no chlorine, no chloride or bichloride of anything, nor any gold whatever. This would confirm KEELEY'S remarkable hedging admission, that after having invented a bichloride of gold cure, and then a chloride of gold and sodium cure, there is no gold salt whatever in a barrel of it. The gold is in KEELEY'S pocket, put there by his dupes, and especially by his religious co-partners.

2. Note that the original claims made were that there were no relapses whatever. The "Glory of the Nineteenth Century" now admits 5 per cent. How far this is from the sad truth will be seen by and by.

3. THE GLORY also "defies analysis of his remedy," and says that "no chemist on earth could tell what it is." Will our readers bear this in mind?

4. The statement of reasons by THE GLORY for not giving the remedy to "the doctors" would make an Egyptian mummy laugh. Alas! that the VERY REVEREND DRS. FUNK and TALMAGE are devoid of a trace of humor.

The advertising pamphlet of "The National Bichloride of Gold Institute of Chicago" lies before us, and contains process portraits of the following Reverend Doctors of Divinity as its endorsers and advertisers:

BISHOP SAMUEL FALLOWS, D.D.
REV. F. A. NOBLE, D.D.
REV. J. WOLFENDEN, D.D.
REV. W. T. MELOY, D.D.

Other representatives of modern Christianity, mentioned in the pamphlet as enlisted in the holy cause of KEELEYISM, are G. B. WILCOX, D.D., J. L. WITHROW, D.D., REV. HARRY TAYLOR, D.D., and clergymen galore! MISS WILLARD and the W. C. T. U. are with THE GLORY also.

But, it is not only the genuine original fraud that has the support of the reverend D.D.'s, and the religious folk. These, indeed, seem almost to prefer the fraudulent imitations of the fraud. For example, a correspondent writes us that in *The Voice* of New York of May 5th, there is a "three-column ad." of a certain GARTEN'S "Terchloride of Gold Remedy," endorsed by the leaders of the W. C. T. U., by FUNK and WAGNALLS," etc. etc.

In the thousandfold advertisements of a certain unsafe cure, the most frequently quoted and most enthusiastic commendations come from doctors of divinity, bishops beloved, pastors dear, and pious clergymen. It would almost seem as if "the Church" had gone into the patent-medicine business. In whatever newspaper you please to look the letters of "religious" teachers are paraded, endorsing the most damnable of the quacks' concoctions. It has become proverbial that such advertisers well know both the ease of entrance to the columns—advertising, reading, or editorial—of what is known as the religious newspaper, and also the paying value of such "ads."

Protestants have for centuries amused themselves by sneering at Catholics for the simple faith that believed in the medical miracles wrought by saintly relics, etc., but in all Catholicism there is nothing so rotten, morally and intellectually, as the support given by Protestant clergymen to the robbery and debauchery of their parishioners by the modern quack.

The workings of the demagogic or sham religious conscience it is impossible for the medical psychologist to trace. His own religion is neither gush, nor zealotry, nor humbug. It is modest, real, and genuine. His simple reasoning is likely to be that if these endorsers get pay for their endorsements, they are the most purple-gilled of sinners; if they do not get pay they are the most long-eared of asses, because the proprietors are making huge fortunes by means of these, their most pliant and compliant tools.

The one lesson that stands forth with glaring clearness is that the modest, sensible, and genuinely religious teachers and leaders of the Church would better quit for an hour the splitting of theologic hairs, and turn their attention to their asinine associates, who in striking hands with opera-bouffe medicine and Mephistophelian quackery, turn the stomachs not only of the medical profession, but of what that profession is both prophet and representative—the coming civilization of science and of common-sense.

BEDSIDE INSTRUCTION IN HOSPITALS.

Interest in the question of bedside instruction in hospitals has recently been vividly aroused in Philadelphia by a newspaper report that such instruction was hereafter to be prohibited at the Philadelphia Hospital. Inquiry into the facts shows, however, that this report is not correct. It is probably the intention of the Bureau of Charities and Correction, after due consultation with the Medical Staff of the Philadelphia Hospital, to formulate such wise regulations as may prevent the use of patients for bedside instruction in a legitimate manner by the authorized Staff of the Hospital from degenerating into an abuse of the patients by unauthorized persons.

Quite apart from local considerations, or the regulations that may or may not be enforced at any particular institution, the broad question as to how far the wards of hospitals should be utilized for teaching purposes is one that demands serious consideration. There can be no doubt that the primary purpose of a hospital is to care for the sick; but if, while carrying out this primary object of rendering service to suffering individuals, there can also be fulfilled the supremely important function of affording students of medicine the opportunity to become practically familiar with disease in its varied aspects, and to observe the effect of remedial measures, an additional service will be rendered to mankind at large.

All men are heir to the ills of flesh. All men at some period in their lives seek medical assistance. It is, therefore, to the interest of all men that those to whom they will apply for such assistance shall be qualified in the highest possible degree. Real qualification for the physician's duties is not to be gained in the study, in the laboratory, or in the lecture-room. The man who can pass the most brilliant examination for his degree is not always the best physician. Theory must be married with practice. The instruction gained from books, from experiments, from the living word of the teacher as he explains principles, summarizes medical history, and relates his own rich experience, must be reinforced and made fruitful by actual contact with disease and with patients at the bedside. Either this fructifying contact of theory with practice must be gained under the direction and supervision of experienced teachers, upon whom shall rest the responsibility for the diagnosis of the cases and for measures adopted for the relief of the patients; or it will be gained only at the cost of much perplexity to the practitioner, and more or less suffering and risk to the patient, after the practically unqualified student enters upon the duties of his profession.

One reason why the country doctor — even if less richly cultured from a literary or scientific standpoint than his brother of the city—is often superior to the latter in the readiness with which he meets emergencies, and in the soundness of his judgment under trying circumstances, is that the country practitioner, as a rule, has been bred to practical medicine by constant association in the work of his preceptor.

It has long been a reproach to our American colleges that they would grant degrees to men who had come no nearer to a patient than might be necessary to look upon him from the benches of the clinical amphitheater. In Great Britain and on the Continent of Europe medical teaching has always been largely done in the hospitals, and the tendency to magnify the importance of such teaching and to increase the opportunities therefor that has recently developed in American schools, is from the standpoint of medical education a most desirable step in advance. It is manifestly to the interest of the community to encourage this tendency and to enlarge the facilities at the disposal of the colleges.

But, the question has been asked, is it to the interest of the patients utilized for teaching-purposes that they be handled by scores of inexperienced men, or that their rest be disturbed, in order to exhibit them to students? Is it just to the poor man in a hospital to subject him to intrusions and disturbances from which the rich man is free?

These questions, however, would not be propounded by those who have watched the conscientious hospital teacher on his rounds. To those who have not had the opportunity for such observation it may be said that the attending physician bestows upon the patients entrusted to his care in hospitals the same thoughtful consideration as is extended to those otherwise situated under the most favorable worldly conditions. The very fact that a patient is to be utilized for demonstration ensures an additional amount of care in thoroughness of observation, in accuracy of conclusion, and in application of therapeutic measures, so that the lesson taught may be truly and deeply impressed. The physician would be unworthy of his trust if, by reason of his zeal as a teacher, he interfered with the progress of

his case, or in any way jeoparded its successful issue; and no man should be made a hospital physician unless he can be confidently depended upon to protect the interests of those entrusted to his care.

SOCIETY PROCEEDINGS.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Forty-second Annual Session, held at Harrisburg, May 17, 18, 19, and 20, 1892.

FIRST DAY—MAY 17TH.

ADDRESSES of welcome were delivered by Governor R. E. Pattison, Mayor J. A. Fritchey, M.D., and Dr. W. T. Bishop, Chairman of the Committee of Arrangements.

An invitation to send delegates to the Pan-American Medical Congress, to be held in Washington, D. C., in September, 1893, was referred to the Committee on Nominations.

DR. W. D. KEARNS, of Pittsburg, read a paper upon "The Injurious Effects of the Current Methods of Averaging Pupils in the Public School to Determine their Position in their Classes." On motion of Dr. Sibbet, the subject was referred to a committee of three to report at this session. Dr. R. L. Sibbet, Dr. W. S. Foster, and Dr. W. D. Kearns were appointed members of the committee.

DR. THEODORE DILLER, of Pittsburg, read a paper entitled "A Plea for Special State Provision for Epileptics," in which he said that epileptics are a particularly unfortunate class in the community, because of the nature and uncertainty of their disease. They have difficulty in getting employment, and are constant causes of distress to their families, besides being great drains on them. There are 615 epileptics in the State asylums and other State institutions. These patients are unsuitable for these institutions, and are a constant source of hindrance to the other patients. A separate hospital or colony, somewhat similar to that of Bielefeld, in Germany, should be established by the State to provide for indigent epileptics. Here, special hygiene, occupation, and classification could be provided in a way not now possible, in the State asylums. By this plan the epileptics would be better cared for, and the State asylums relieved of a great burden. The full text of the paper is to appear in a subsequent number of THE NEWS.

On motion, Dr. F. H. Edsall, Dr. Curwen, and Dr. Kerlin were appointed a committee to consider the subject of the State Care of Epileptics, and were instructed to report to the Society.

DR. G. R. ROHRER, of Lancaster, read the "Address in Otology." It contained practical hints for daily work. Careful examination is imperatively required in every ear case. A reflector, a head-mirror, and good light are necessary. The speculum should be introduced with care and gentleness. Impacted cerumen is often present. For its removal, the syringe is the best agency. Warm water thrown in the meatus softens the accumulation, and it is readily washed out. A flat probe should be used to press the wax from the walls, when it can be gently removed with the forceps. Eczematous inflammation is very common in the external ear. It should be treated as acute eczema is treated anywhere else. It should be washed but little, and no soap should be used. When the condition becomes chronic, from a two to four per cent. ointment of ammoniated mercury should be employed. When furuncles are present, and the condition is acute, leeches may be applied in front of the ear, followed by the hot douche and black wash. If necessary, an incision should be made, and hydrogen dioxide freely applied. The great point in all ear-troubles is to faithfully keep the part clean when a discharge is present.

DR. EDWARD JACKSON, of Philadelphia, read a paper on "The Mechanical Treatment of Trachoma." He stated that the astringent plan requires a long time and much persistency. The mechanical treatment is preferable, in the form of expression. Knapp's method consists in the employment of a roller forceps. It must be employed with care; the secretions should be thoroughly removed. The rollers should be well centered, should move freely, and not drag, and should not be flattened. The vicinity of the commissures should be thoroughly cleansed. Edema and swelling of the lids follow, but soon disappear; and it is wonderful how quickly a cure will follow. Often no other or after-treatment is required. The application is best made under anesthesia.

DR. J. M. BATTEN, of Pittsburg, read a paper on "Diphtheria." He related the history of two cases of diphtheritic croup successfully treated with calomel. He dwelt on the point that certain forms of diphtheria do best under treatment with the tincture of chloride of iron, potassium chlorate, and whiskey, while other forms do best with calomel or other mercurial. Attention was directed to the importance of local treatment, and the enforcement of a proper prophylaxis was strongly urged.

DR. FREY expressed the belief that diphtheria and membranous croup are not identical.

DR. H. G. MCCORMICK, of Williamsport, stated that he used locally the bichloride spray, and at once gets the disease under control. In seventy-four consecutive cases he had not failed once. He used a solution of 1 : 1500 every hour, for forty-eight hours. As a result, a line of demarcation formed. There appeared to be no need of potassium chlorate and iron. Post-nasal diphtheria is the most difficult of treatment. Dr. McCormick stated that he only used whiskey occasionally as a tonic.

DR. W. B. ULRICH, of Chester, reported that he had given to a moribund child two years old, twenty grains of calomel every two hours until two hundred grains had been taken, with recovery in twenty-seven hours. Diphtheria is a constitutional disease. Dr. Ulrich stated that he had never had bad effects from potassium chlorate, although he had given large doses. He maintained that there is no identity between diphtheria and croup.

DR. PHILLIPS stated that he had utterly failed with mercury.

DR. T. C. DUNN, of West Chester, reported that he had used hydrogen dioxide. He experienced the best effects at once. The agent deodorizes and dissolves the membrane.

DR. BAUER, of Philadelphia, related that he had good success with calomel.

DR. I. C. GABLE, of York, stated that he regarded

diphtheria and croup as one disease. All cases are isolated. He employs alcohol in large doses, practically intoxicating the child, if he can. Locally, equal parts of tincture of iron and glycerin are applied.

Dr. Hiram Corson, of Conshohocken, expressed the view that the two diseases are distinct. Since 1850 he has used ice to the throat and internally. Everything else has failed in his hands. He objected to the employment of whiskey as wrong in every way.

Dr. H. A. Hare, of Philadelphia, endeavored to harmonize the different views by explaining that the various modes of treatment were useful at different stages of the same disease. The difference is one of degree. The disease is both local and constitutional. Hence mercury acts well in the early stage; it eliminates the plastic exudation. After that it is more dangerous than useful, and tincture of chloride of iron and whiskey are best. All cases should be isolated.

Dr. Alexander, of Center County, insisted that diphtheria and croup are two diseases. He stated that he does not isolate cases of croup, and never saw a second case in a family.

Dr. J. Aulde, of Philadelphila, expressed his belief in the identity of the diseases. Local in the incipiency, the local manifestations should be treated early and the multiplication of bacilli prevented. The best agent is hydrogen dioxide, in spray, as a gargle, and internally. Dr. Aulde stated that he used mercury, tincture of iron, and the chlorates. The best of these remedies is mercuric iodide. Calomel acts on the liver and plays the part of an eliminant.

Dr. Dercum, of Philadelphia, stated that he regarded diphtheria and croup as essentially identical. The differences between them depend upon the anatomy of the parts.

Dr. Sibbet, of Carlisle, expressed his belief in the efficacy of the ice-treatment.

Dr. Hull objected that the blood is too commonly saturated with alcohol.

Second Day—May 18th.

Dr. H. C. Wood, of Philadelphia, read a paper entitled "Neuropathic Insanity in Relation to Crime." He made two groups of cases. In one, delusions existed, or a condition of paranoia. In the other, delusions are wanting, or are not evident—a condition of reasoning insanity. Religious belief often runs into religious insanity. Persons so affected are dominated by an idea that they know to be false, but they cannot shake it off. The impulse may be controlled, but it may at any time lead to harm. Others are unable to control it. The reasoning insane are the most to be dreaded. They cannot rely upon their own integrity. Hysteria is not a madness, but it may become such. Dipsomania is a normal human attribute, the basis of many cases of insanity, generally easily controlled at first; but the continuance of the vice alters the nerve-centers. If these cases could be controlled by law, they could be cured. Unfortunately, the law will not allow such control. A nervous criminal cannot be reformed. He has no fear of punishment. Society must protect itself. Cases of this kind, when recognized, should be isolated and made to earn a living. It is proper that all such that are useless and a burden to society should be destroyed, if necessary. They are only a tax on others.

Dr. Hiram Corson expressed himself as in full accord with Dr. Wood.

Dr. Dercum, of Philadelphia, expressed the belief that drunkenness could be cured by legal restraint. The knowledge that repeated crime will bring an enduring punishment would act to restrain drunkards. Such a course would be better than temporary imprisonment, followed by dismissal and an opportunity again to commit crime. There should be a State Inebriate Asylum, in which such patients should be kept, as are other insane patients.

Dr. H. A. Hare read a paper entitled "Some New Medicaments." He had found camphoric acid, given in capsule or in tablets (as it is insoluble in water), twenty grains three times a day, to be of great value in night-sweats of any form. Piperazine had not given as good results in gout or rheumatism as had been expected. It had failed in the cases in which it was employed. The dose is fifteen grains in twenty-four hours. Dr. Hare stated that codeine is not used in diabetes mellitus as it deserved to be. From one to three grains should be administered three times daily, the dose to be increased until it produces drowsiness, when it is to be reduced. He cited cases in which it had been of great value. Croton chloral is an analgesic of special value in facial neuralgia, given in doses of from five to twenty grains three times daily. It generally acts at once.

The strontium salts, bromide, phosphate, lactate, are of value. The bromide acts without causing cutaneous eruptions or gastric irritation, as other bromides so surely do. From ten to thirty grains may be given three times a day. The lactate is of considerable value in albuminuria. It decreases the quantity of albumin in the urine, but this is likely again to increase if the remedy is withdrawn. The dose for this purpose is thirty grains, repeated as seems necessary. It was stated that creasote often fails in pulmonary tuberculosis, and does not act as it was expected from the reports that it would. Two drops are at first given three times a day, the dose being gradually increased until the stomach becomes irritable. Dr. Hare had employed doses as large as from ninety to one hundred drops, but had failed. The remedy is best given in milk. In chronic bronchitis it is of singular advantage, taken until the urine becomes smoky, and then decreased. Given thus, it generally cures.

Dr. H. C. Wood expressed the belief that codeine gives diverse results. Much of its effect, he thought, is due to the contaminating presence of morphine. It fails as often as it succeeds. It is, without doubt, the diet that does the good, and not the drug. Croton chloral is no better than the chloral.

Dr. Hare, in closing, said that in the cases referred to, tincture of opium had failed, but codeine had at once produced good results. Appropriate diet had been tried, but failed.

Dr. X. O. Werder, of Pittsburg, read a "Report of Fifty Laparotomies."

The following officers were unanimously elected:

President.—Dr. H. L. Orth, of Dauphin County.

Vice-Presidents.—Dr. J. B. Roberts, of Philadelphia; Dr. W. B. Ulrich, of Delaware County; J. J. Finerty, of Erie County, and L. S. Gaddis, of Fayette County.

Permanent Secretary.—Dr. W. B. Atkinson, of Philadelphia.

Assistant Secretary.—Dr. J. P. Connelly, of Lycoming County.

Treasurer.—Dr. G. B. Dunmire, of Philadelphia.

For the next place of meeting, Williamsport was selected.

DR. A. A. WOODS, of Erie, read the "Address in Hygiene." He made a plea for better sanitation. After giving certain data, he demanded more extended powers for the State Board of Health and a larger grant of money with which to do the work. The Board had no quarantine powers, though the act creating it required quarantine to prevent the spread of contagion. Pennsylvania is about the lowest on the list of States as to appropriation.

DR. MURDOCH, for Dr. Davis, of Pittsburg, read the "Address in Surgery." He spoke of the many reports of operations, and of the tendency to excess in the performance of certain operations, as laparotomy, gastrotomy, etc. The tide now drifts to operations on the spine and lungs. Antisepsis is used, but coupled with gross carelessness. Ovariotomy is too much resorted to. Suturing of intestinal wounds is a great success. Excision of the esophagus should be preceded by an effort to obtain relief by dilatation by the use of the bougie. Dr. Murdoch alluded to the urgent need of more care in the selling of concentrated lye, as so much injury results from the unintentional taking into the mouth, etc., of the cauterant. The vermiform appendix is useless, and causes much trouble. For the inflammatory affections of the appendix laparotomy is the operation, as it also is for the removal of gall-stones, etc. Supra-pubic lithotomy is more commonly performed than formerly, and is the best operation in suitable cases. Anesthetics are still under discussion. One merits special allusion, *i. e.*, the A. C. E. mixture. The alcohol and the ether modify the action of the chloroform. The mixture is the safest anesthetic.

The discussion was participated in by Dr. John H. Packard, Dr. H. C. Wood, and others.

The paper of DR. W. L. ESTES, on "Some Points in Surgery," was read by title.

DR. M. PRICE, of Philadelphia, read a paper on "Amputation Below the Knee." He took the ground that amputations below the knee should be performed some five inches below the joint, so as to permit of the use of an artificial leg with comfort.

The paper was discussed by Dr. Packard, Dr. Murdoch, and Dr. H. A. Wilson.

The paper by DR. JOSEPH LEIDY, on "Insanity Following Surgery," was read by title.

On motion of DR. S. SOLIS-COHEN, of Philadelphia, it was

Resolved, That the Medical Society of Pennsylvania hereby expresses its highest disapprobation of the practice of giving certificates or testimonials to secret preparations alleged to be of medicinal virtue, and calls the attention of the affiliated county societies to the fact that such action on the part of members of the said societies is in derogation of the dignity of the profession and in violation of the letter and the spirit of the Code of Ethics of the American Medical Association and of this Society.

Resolved, That this Society likewise expresses its disapprobation of the practice of inserting advertisements of secret preparations in the columns of medical journals, such action being an insult to the intelligence of the profession and a degradation of journals indulging therein to the level of the patent-medicine almanac. Especially to be condemned is the action of the *Journal of the American Medical Association* in admitting such advertisements.

Resolved, That copies of these resolutions, duly attested by the Permanent Secretary, be sent to all county societies in affiliation with this Society, to the American Medical Association, to State medical societies in affiliation therewith, and to the publishers and editors of American medical journals.

These resolutions were discussed by a number of members and unanimously adopted.

DR. J. A. LIPPINCOTT, of Pittsburg, presented a report on "Contagious Diseases in Orphan Asylums."

THIRD DAY—MAY 19TH.

DR. J. H. MUSSER, of Philadelphia, read the "Address in Medicine." He said that functional disorders are infrequent as compared with organic. All specialists find cases of organic disease to constitute the greater part of their work. Next in frequency come specific and infectious diseases. Dr. Musser alluded to the usefulness of antisepsis, but maintained that asepsis is even more urgently necessary. If in a given case antisepsis were instituted at once, 90 per cent. of the sequelæ and mortality would be saved. "Colds" need to be treated on the same principles. If a coryza were treated in its incipiency by means of antiseptics, by washing the nasal passases, etc., many additional attacks in the same house would be prevented; for "colds" are contagious and infectious. Chronic infections, such as tuberculosis, imperatively demand antisepsis. Then, rest, less wear and tear, diet and bathing, occupy an important place in treatment. So with renal diseases. In dyspepsia, we may wash out the stomach and regulate the diet, but we must be careful not to overdiet or to overtreat, as with bismuth, etc. General measures are best, and tonics, such as nux vomica, in increasing doses, are especially useful. So with other affections. In fever, the only true antipyretic is cold.

A paper by DR. J. C. WILSON, of Philadelphia, on "The Death-rate of Enteric Fever," was read by title.

A paper by DR. T. J. MAYS, of Philadelphia, on "The Hospital Treatment of Consumption," was also read by title.

DR. E. LAPLACE, of Philadelphia, read a paper entitled "Causes of Failure in the Treatment of Appendicitis." A common cause of failure depends upon tardy treatment. A good deal can be expected from appropriate treatment, such as intestinal drainage, induced by the free use of salines; then, if relief does not follow, the surgeon must act. The indication is to ligate and remove the appendix. Delay here is another cause of failure. Sepsis must be prevented; drainage must be maintained; neglect of these conditions may result in failure. Engorgement is subsequently to be removed by salines.

In the absence of DR. H. G. MCCORMICK, of Williamsport, DR. MONTGOMERY read the "Address in

Obstetrics." It was stated that childbirth and its management are topics important both to physician and patient. Strict antisepsis is imperative. Absorption of microbes is to be prevented, and elimination of noxious matters in the system is to be encouraged. All lacerations should be closed at once, and all débris of placenta, etc., removed with extreme care. Mercuric chloride is best used in a strength of 1 : 4000. It should be employed until the temperature falls. Drainage by means of iodoform gauze should be provided for. Creolin is much less valuable than mercuric chloride. Ergot should be employed to cause closure of the cavity of the uterus. When puerperal infection has begun, all these agencies, with whiskey, are to be energetically employed. The puerpera bears stimulation well. Stimulants should thus be used early and unsparingly. Quinine may be employed as a tonic, not an antithermic. Pilocarpin, hypodermatically, causes lowering of the temperature. The patient must not be starved, but her resources should be husbanded.

DR. TYSON, of Philadelphia, stated that we are often misled by the absence of elevation of temperature, both in peritonitis and in perforation during typhoid fever. Suggestive symptoms are increased frequency of pulse and increased rapidity of breathing.

DR. DUFF, of Pittsburg, expressed faith in asepsis, etc., but he felt that not enough stress is laid on the care of the woman prior to delivery.

DR. ULRICH, of Chester, believed in cleanliness, but not so much in antisepsis. He contended that if we close the uterus we imprison débris. In many thousand cases, without special antisepsis, save cleanliness, he had not had a single death. Labor is healthy ; there is no need of washing out the uterus, unless some special cause has arisen. Too much is done ; there is too much interference with natural labor.

DR. MONTGOMERY said that in regard to labor, cities differ greatly from country places, where perhaps the dangers of septic infection are not so likely.

On motion of DR. A. B. BRUMBAUGH, of Huntingdon, it was unanimously

Resolved, That in view of the great national and even universal importance of the subject of hygiene and public health, the State of Pennsylvania, through its Medical Society, may express its appreciation of, and join in, the petition of the American Medical Association, as presented by its committee of thirty, appointed at its meeting in Washington, D. C., in May, 1891, "to memorialize Congress to create a cabinet officer, to be known as a Medical Secretary of Public Health" ; therefore the Medical Society of the State of Pennsylvania warmly commends the movement, and hereby petitions the Congress of the United States to create a Department of Public Health, the head of which shall be a member of the Cabinet of the President. Believing that the creating of such an officer, of equal rank with the secretaries of other departments of the Government, would greatly stimulate and strengthen the efforts of State Boards of Health in their endeavors to promote and disseminate correct knowledge of sanitation and sanitary subjects, so vital to the well-being of the whole people, all members of the State Medical Society are hereby earnestly urged to use their personal and united influence with their several Congressmen to secure favorable action and the enactment of the law contemplated.

On motion of DR. HAMILTON, of Harrisburg, it was

Resolved, That ten members of the society (no two from one county) be appointed by the president as representatives in the Pan-American Medical Congress, and also the appointment of five members from each county medical society to this Congress be recommended.

On motion of DR. C. W. DULLES, of Philadelphia, it was

Resolved, That the president be authorized to appoint a committee of five, to be known as the Committee on Scientific Business, to coöperate with the Committee of Arrangements and Credentials in securing for the next annual meeting scientific papers and discussions.

DR. P. J. ROEBUCK, of Lititz, offered the following :

Whereas, It is the desire of the Pennsylvania Pharmaceutical Association to offer an amendment repealing Section 11 of the Pharmacy Law, which permits physicians to carry on the retail drug-business without examination ; therefore, be it

Resolved, That it is the sense of the Medical Society of the State of Pennsylvania that no physician should be permitted to carry on the retail drug-business, without proper qualifications, as determined by an examination in practical pharmacy.

Resolved, Further, that it is also the sense of the Society that the Pennsylvania Pharmaceutical Association should use its best efforts in securing action prohibiting druggists, who are not registered physicians, from prescribing for diseases.

After a spirited discussion the resolutions were adopted.

An amendment offered by DR. DULLES and others providing for a scientific committee to aid the Committee of Arrangements was laid over until the next annual session.

DR. H. A. KELLY, of Baltimore, Md., read a paper on "Operation for the Relief of Relaxation of the Vaginal Outlet," illustrated by a series of photographs displayed on a screen. He alluded (1) to the commoner important injuries of the vaginal outlet resulting from parturition ; (2) the clinical characteristics of the complete tear ; (3) simple partial tears ; (4) tears extending up within the vaginal canal, resulting secondarily in relaxation of the vaginal outlet ; (5) the importance of this form of injury ; (6) the treatment of relaxation of the vaginal outlet. Each slide showed a step in the operation.

DR. E. E. MONTGOMERY, of Philadelphia, read a paper entitled "A Consideration of the Relative Advantages of Colotomy and Sacral Resection for the Formation of an Artificial Anus." He reported three cases, one of lumbar colotomy, one of inguinal colotomy, and one of sacral resection. He asserted that the necessity of performing lumbar colotomy is no longer apparent, for the reason that later methods of abdominal surgery had rendered the increase of danger from opening the peritoneal cavity so slight that the mortality was no longer to the advantage of the lumbar operation.

Certainly the difficulty of caring for the discharges was much greater than when the operation was done anteriorly. There is a certain class of cases in which

colotomy is the only plan of procedure to which we can resort, as the disease is situated so high up that the gut cannot be reached through the pelvis. In all cases in which the disease, however, is confined to the rectum, sacral resection presents the best method of procedure, for by it we are not only enabled to establish an artificial anus, but are afforded the best method of procedure in the removal of diseased tissue. An anus situated in this region offers the advantages of being better under control in the wearing of a pad to prevent clothing and person from being soiled; secondly, the patient is not required to assume an unnatural attitude in order to accomplish the evacuation.

DR. J. M. BALDY, of Philadelphia, read a paper on "Chronic Endometritis." He has found the condition to be common. The causes are septic and specific infection. Gonorrhea is largely its cause. The acute form soon becomes chronic. The best treatment comprises cervical dilatation under ether, thorough curetting, washing out, applying tincture of iodine and packing with iodoform gauze. After a week, ergot is given if there be hemorrhage, or if the uterus is relaxed, say half a dram of the fluid extract three or four times a day; and iodine is applied locally twice a week.

DR. F. LEMOYNE read a paper entitled "Suggestions for Operation in Laceration of the Perineum in Labor." He detailed a case of primary operation for laceration illustrating the advantage of thorough drainage of the vagina, and offered some suggestions for the satisfactory accomplishment of that indication.

DR. I. N. KERLIN, of Elwyn, offered the following, which was unanimously adopted:

Whereas, The State of Pennsylvania in common with the most advanced States of the Union, has for more than thirty years made special provision for the training and protection of idiotic and feeble-minded children; and

Whereas, This provision has been very limited, extending to not more than one-tenth of those whose infirmities need it; therefore

Resolved, That the Legislature of Pennsylvania be petitioned by this body, the Pennsylvania State Medical Society, assembled at Harrisburg, May 19, 1892, to establish a second institution for idiotic and feeble-minded persons, in the western part of our State, to meet the necessities of our western population, so that the overburdened Pennsylvania Training School for Feeble-minded Children at Elwyn be so relieved that it may minister to the great demands made upon it from the eastern tier of counties.

Resolved, That the secretaries of the county medical societies of Western Pennsylvania are hereby constituted a committee to carry out the intent of these resolutions.

It was agreed that a memorial page to the late Dr. D. Hayes Agnew should be placed in the next volume.

The paper of DR. C. P. NOBLE, of Philadelphia, on "Anterior Displacement of the Uterus," was read by title.

The Society adjourned, to meet on May 18, 1893, at Williamsport.

Adolph Jarisch has been made Professor-extraordinary of Dermatology and Syphilis at Gratz.

ASSOCIATION OF AMERICAN PHYSICIANS.

Seventh Annual Meeting, held at Washington, May 24, 25, 26, 1892.

FIRST DAY—MAY 24.

DR. HENRY M. LYMAN, of Chicago, delivered the "President's Address." He paid glowing tribute to the memory of Dr. Francis Donaldson and Dr. Henry Ingersoll Bowditch, members of the Association who had died since the previous meeting.

The past year has not been particularly fruitful in brilliant discoveries within the field of medicine. Medical progress can advance only as the allied sciences pave the way by discoveries that can be utilized for the explanation of physiologic and pathologic phenomena, thus rendering possible new investigations in therapeutics. For these reasons, it is highly important to carefully follow the course of research in all departments of scientific investigation. Great activity has characterized the workers in those departments; during the past year a number of beliefs that were previously held upon hypothetic grounds, have been subjected to the final test of experimental evidence, thus enlarging the field in which the uniform operation of the laws of physics and chemistry has been demonstrated. A good deal has recently been accomplished in the realm of astronomy by the aid of photography and the spectroscope. To physicians, the principal interest lies in the demonstration thus afforded of the unity of type and method in all the cosmic movements of matter, enabling us to read in the language of the stars the past history and the future course not only of our own solar system, but of the planet upon which we dwell.

The experiments in electricity that were announced three years ago by Professor Hertz, of Karlsruhe, have continued to bear fruit during the past year. It may now be assumed as experimentally demonstrated that electricity, as well as light and heat, is what it has long been supposed to be—a mode of motion in an all-pervasive ether. By this demonstration we are brought one step nearer toward the complete definition of the antithesis between mind and matter.

Among the biologists, during the past year, research has been particularly occupied with the investigation of the elementary composition and attributes of protoplasm. In connection with the questions that bear upon the subject of heredity, many interesting observations have been published; the investigations of Strasburger, Flemming, Guignard, and Fol have thrown new light upon the phenomena of fecundation and reproduction, giving reason to hope that in no very distant future, the problems of heredity may receive a satisfactory solution. Another important question regarding the ultimate organization of protoplasm itself is gradually approaching its solution. Two rival hypotheses at present occupy the field. Altman, Straus and Vogt are of the opinion that cell-protoplasm is to be considered as an aggregation of coördinated elementary organisms that bear to the animal or vegetable cell a relation not unlike that of independent microbes. The constituent cells of the tissues, according to this hypothesis, are supposed to be made up of aggregations of a microzoic or microphytic nature, which differ from ordinary bacteria and protozoa

only by their smaller dimensions and their capacity for coördinate activity. The bearing of such speculations upon the facts of infection and of fecundation is quite obvious. On the other hand, Bütschli maintains that it is entirely unnecessary to assume the existence of any special coördinating force, and is of the opinion that all the phenomena that are exhibited by protoplasm may be produced by the operation of ordinary chemic and physical forces.

The past year has been distinguished by the completion of the new edition of Eichhorst's great work on *Internal Medicine*, and by the appearance of the first two volumes of the French *Traité de Médecine*. In the United States, Osler, a member of our Association, has laid upon the medical profession a debt of gratitude for his admirable volume on the *Practice of Medicine*. The profession is to be congratulated upon these epoch-making achievements, especially since they indicate the complete recuperation of the French school of medicine from the stunning shock of the Franco-Prussian war. The consecutive volumes of Eichhorst remind one of the invincible German infantry—ponderous, thoroughly trained and invincible, but war-worn and weather-stained to the last degree. Turning from these serried ranks to the French side of the line, we find all the pomp and circumstance of war, all the glitter of gold, the splendor of apparel, the *élan* and *esprit* that have always characterized the French nation. Judging from the already published volumes, the new *Traité de Médecine* will be, when completed, the most valuable contribution to the literature of internal medicine that has been yet produced. The world certainly cannot yet dispense with the services of the French any more than it can do without the Germans.

The paper of Dr. Pepper, of Philadelphia, entitled "Report of a Case of Glanders, with Results of Bacteriological Study," was read by title. The case was that of a white man, aged fifty-five years, a shoemaker who had been healthy until eighteen days before entrance into the hospital. He was a moderate drinker. His illness began with the appearance of two indurated nodules under the skin, painful at first, but later only tender on pressure. At the same time there were malaise, diarrhea, excessive frequency of micturition and slight fever. On entrance into the hospital, eighteen days later, similar subcutaneous nodules were found in several localities; the patient was weak and stupid; the pulse was rapid and the respiration hurried. The skin over the nodules was in some places healthy, in others dark red, and subsequently ulcerated. The patient's condition grew worse and worse with the appearance of new nodules, and after a period of complete stupor with subsultus tendinum and other nervous manifestations, he died. Careful examination of the blood was made repeatedly during life, for the purpose of determining the presence of bacteria, but none were found. The blood contained 4,800,000 red corpuscles to the cubic millimeter, all of normal appearance at the first examination, and there was mild leukocytosis. On post-mortem examination numerous bullous vesicles were found on the anterior surface of the face, trunk, and extremities, with a few patches of more extensive excavation and necrosis. The lungs contained numerous areas of lobular pneumonia, some of which had become cheesy in the center. Similar nodes were seen in the larynx, in the liver, and in the muscles of the extremities; and in the latter two situations there were also small abscess-cavities, formed by the breaking down of the nodules. Microscopically, the nodules showed the histology of glanders, and in some instances, notably in the skin and pulmonary lesions, glanders-bacilli were found in moderate numbers.

Typical cultures of glanders-bacilli were obtained from the pus of subcutaneous nodules, and guinea-pigs were successfully inoculated. By accidental abrasion and inoculation the hand of the experimenter became infected, and the nodule that developed and was subsequently removed showed a structure similar to that of those of the original patient and the guinea-pigs.

There is no evidence to show the mode of infection of the patient, since his occupation and life had not brought him into association with horses. He worked with leather, but only such as had been thoroughly tanned.

Dr. Wilkins, of Montreal, read a paper on "The Cold Water Treatment of Typhoid Fever," which is published in the current number of The Medical News.

In the discussion Dr. Osler, of Baltimore, gave the statistics of the treatment of typhoid fever at Johns Hopkins Hospital. Under symptomatic treatment the mortality was high, while under the Brand treatment the mortality was about 7 per cent.

Dr. Pepper, of Philadelphia, gave credit to Dr. J. C. Wilson for his early advocacy of the cold-bath treatment. He advised the use of the portable tub in private practice, and expressed his conviction of the great value of the method generally in a vast majority of cases. It should be begun in the early stages of the disease. A highly important part of the treatment is the friction during the bath.

Dr. Atkinson alluded to the large number of cases in which the temperature never reached 102° or 103°. He asked concerning the use of the cold bath in these cases.

Dr. Tyson, of Philadelphia, doubted the great value of the friction.

Dr. Stockton, of Buffalo, thought that patients with temperatures under 102° or 103° were often benefited by the bath, and that, therefore, the good effects of the bath are not limited solely to a lowering of the temperature.

In reply, Dr. Wilkins agreed that friction was advantageous, and thought its omission constituted an objection to the pack alone. High temperature has a paralytic effect on the vasomotor system, and hence the value of friction to keep up the elasticity of the capillaries. He did not think the bath was contra-indicated by the fact of menstruation. He also saw no objection to the bath if the temperature should be low.

Dr. Victor C. Vaughan, of Ann Arbor, presented an interesting paper entitled "A Bacteriological Study of Drinking-water," reporting the results obtained by chemic and bacteriologic examination of one hundred and forty-eight samples of drinking-water that had been sent to the Hygienic Laboratory of Michigan University by health-officers. From these, thirty-one kinds of bacteria have been isolated and studied sufficiently to admit of identification. Of these thirty-one species, twenty-four fail to grow at a temperature of 38° C., and consequently

cannot cause disease. Of the seven remaining species, three are without effect upon rats, guinea-pigs, rabbits, and mice, while four are toxicogenic to these animals. The toxicogenic species differ morphologically from one another and from the bacillus described by Eberth as the cause of typhoid fever, but all produce practically the same effects upon animals, the difference being in degree rather than in kind. Of the five (the four toxigenic germs and that of Eberth), the bacillus venenosus is the most virulent. It was first found in the water of a well on the premises of a milkman whose patrons were prostrated with typhoid fever. It was also found in the milk. This germ is much shorter and thicker than that of Eberth as obtained from the Hygienic Institute of Berlin. As taken from the water, it forms a heavy, yellowish-white growth on potato, but when taken from the spleen of a guinea-pig that has survived inoculation for some days, it forms an almost invisible growth.

Each of the thirty-one germs was described in detail, and the results of a large number of inoculation-experiments with the toxicogenic germs were given.

The full text of the paper is to appear in the *American Journal of the Medical Sciences.*

In the discussion DR. STERNBERG spoke of the difficulty of differentiating the distinctive characteristics of the bacillus of typhoid fever, because the organism varies so greatly according to the media and methods of cultivation.

DR. WELCH alluded to a lack of clearness in Dr. Vaughan's distinction between what he called toxicogenic and pathogenic bacteria, and also emphasized the difficulty of determining the distinctions between the different varieties of typhoid bacilli, according to their sources, etc. The secondary lesion, due to the invasion of the bacillus coli communis, he also thought had often been mistaken for the work of the typhoid bacillus, the lesions thus often misinterpreted resulting in a serious confounding of the two germs and their effects.

In reply, DR. VAUGHAN alluded to the decided advantage it would have been to his own study if he could have had the spleens (as well as the samples of drinking-water) of the persons dying of typhoid fever.

As to the words toxicogenic and pathogenic, he wished, in differentiating their uses, to keep the latter word for a definite meaning, leaving the former large and vague in significance. Dr. Vaughan contended that typhoid fever may originate without traceable preëxisting infection from previous cases, and that different germs or varieties of one family may set up the disease. He does not believe in an origin *de novo;* the disease is always due to microorganismal agency, but a number of different and widely-existing germs may cause it. Tolerance to these germs is easily secured in animals, and, just so, man may acquire a tolerance for one germ and tolerance for one variety; thus, the bacillus of Eberth insures a tolerance for others of a similar pathogenic action.

DR. THOMAS S. LATIMER, of Baltimore, read a paper entitled "A Brief Summary of the Clinical History and Treatment of Two Thousand and Twelve Cases of Alcoholism, of which Eighty-seven were Maniacal." He contended that the clinical phenomena attending excesses in the use of alcohol are the direct result of overstimulation, and are not due to the abrupt withdrawal of the stimulus. Though the ability to swallow and to retain stimulants is frequently wanting, the desire for them almost uniformly persists. Alcohol in any form or quantity is unnecessary in the treatment of such cases, and is usually hurtful. The absolute and immediate withdrawal of alcohol is of the first importance in the treatment of all the symptoms due to its excessive use, even in cases characterized by great feebleness and inability to partake of food. Forced feeding is rarely necessary, and is of doubtful utility in most cases. For the protection of the patient no kind of bonds is called for, and when necessary for the protection of others, or for the contents of the room, they injuriously affect the mental state of the patient.

The full text of the paper is to appear in a subsequent number of THE MEDICAL NEWS.

DR. GEORGE M. STERNBERG, Lieut.-Col. and Surgeon U.S.A., read a paper entitled "Practical Results of Bacteriological Researches." He contended that science does not demand practical results, but investigates for the purpose of establishing facts and explaining phenomena. Medicine, however, is eminently practical in its aims, and practising physicians, as well as intelligent laymen, meet every announcement of a new discovery in pathology with the question, "Does it aid in the cure of disease?"

Heretofore, the bacteriologist has been compelled to admit that the discovery of the specific cause in a considerable number of infectious diseases has not resulted in the discovery of a specific treatment for these diseases.

Recently, however, experimental evidence has been obtained that leads to the belief that, in a number of infectious diseases, at least, the toxic bacterial products, which give rise to the morbid phenomena characterizing these diseases, may be neutralized in the infected individuals by the administration of anti-toxines obtained from the blood of immune animals.

The practical results of bacteriologic researches in the field of preventive medicine were also briefly referred to.

The establishment of aseptic surgery on a scientific basis also depends on bacteriologic researches relating to the pyogenic micrococci commonly concerned in wound-infection. The treatment of localized infectious processes, when these are accessible to local treatment, has been favorably influenced by the exact knowledge relating to antiseptic and germicidal agents obtained by the researches of bacteriologists.

Reference was made to the recent experimental evidence relating to anti-toxines in the blood of animals that have acquired immunity to virulent cultures of the bacillus of tetanus, the micrococcus of croupous pneumonia, the bacillus of diphtheria, the bacillus of tuberculosis, and to the virus of rabies; also to the recent experiments of Ehrlich showing that animals may acquire immunity to the pathogenic action of certain vegetable toxalbumins—*ricin* from the castor oil bean, and *abrin* from the jequirity bean.

Finally, an account was given of experiments recently made by Dr. Sternberg, in Brooklyn, which show that the blood of a calf that has been vaccinated, and consequently is immune to vaccinia, contains a substance that neutralizes the specific virulence of vaccine lymph, either bovine or humanized.

Dr. Sternberg closed his paper by stating that it is his intention to follow up this line of investigation, and to endeavor to isolate the anti-toxine of vaccinia; also to test the question of its possible specific action in neutralizing the smallpox virus in infected individuals before or after the development of the disease.

The paper will be published in full in the July number of *The American Journal of the Medical Sciences.*

In the ensuing discussion DR. WELCH spoke of Kitasato's conclusions as to immunization, the law seeming to be that the more originally susceptible the animal is to the disease the greater is the power of immunization conferred by the blood of the immune animal. He also had doubts as to the striking results said to have been secured by certain investigators in securing immunization of man by means of the serum of the blood of animals.

DR. VAUGHAN also advised conservatism in drawing conclusions as to immunity in animals. It is easy to render animals immune, but the immunity is *temporary* and lasts but a few months, as in Dr. Sewall's experiments in pigeons and rattlesnake poison. Dr. Vaughan thinks the agent must be of the nature of a ferment. It is not necessary that the substance shall be *per se* poisonous.

DR. LYMAN also emphasized the fact of the transient character of the protection conferred by immunization-experiments.

In the absence of DR. E. L. TRUDEAU, of Saranac Lake, his paper entitled "The Treatment of Experimental Tuberculosis by Koch's Tuberculin, Hunter's Modifications and other Products of the Tubercle-bacillus," was read by DR. W. H. WELCH, of Baltimore. The objects of the research were to determine: (1) whether or not Koch's tuberculin has any curative influence in inoculated guinea-pigs; (2) the curative value and dangers of Hunter's modifications of tuberculin in experimental tuberculosis; (3) whether the remedial element of liquid cultures of the tubercle-bacillus resides in the bacterio-proteïn of which the bacilli are composed or in the soluble albumoses and toxines produced in artificial culture-media, as the result of their life-history.

The first part of the paper was devoted to a consideration of the effects of Koch's tuberculin and of Hunter's modifications, the conclusions reached being: (1) that Koch's tuberculin does not cure experimental tuberculosis in the guinea-pig, although its specific influence on the primary lesions is indisputable; (2) Hunter's modification, C B, contains less of the remedial principle than does tuberculin, and is quite as dangerous; (3) modification B is as efficacious as tuberculin, and is free from some of its dangers.

In the second part of the paper were described experiments made to determine whether the curative substance in liquid cultures of the tubercle-bacillus resides in the bacilli (bacterio-proteïn) or in the beef-broth in which they have grown.

The most instructive evidence was obtained by treating rabbits inoculated in the anterior chamber of the eye.

The following conclusions were based on these studies: (1) solutions of bacterio-proteïn have a doubtful and at best a feeble remedial influence on experimental tuberculosis; (2) they produce suppuration and serious constitutional impairment, which may occasionally result in organic disease and death; (3) the liquid culture-medium in which tubercle-bacilli have developed, but from which they have been removed by filtration, contains the elements that bring about reaction and cure in tuberculous tissue; (4) experimental tuberculosis in the rabbit's eye can be cured by injections of this filtrate of liquid culture; (5) the permanency of the cure has not yet been determined.

Photographs and living animals illustrating the effects of the treatment and the entire restoration of the inoculated eyes under treatment with the liquid of filtered cultures were shown.

DR. KINNICUTT spoke eulogistically of the great value of Dr. Trudeau's work, and made the interesting statement that by mutual agreement, but without any knowledge of the results of each other, while Dr. Trudeau had been experimentally working with Koch's tuberculin and Hunter's modification, he himself had been proceeding clinically on the same lines. Not until today had he known of Dr. Trudeau's conclusions. His own clinical results went to show that tuberculin *does* contain a remedial principle. Trudeau's second conclusion has been proved absolutely true by his experience at St. Luke's Hospital. The third proposition also conforms with his own clinical experience. In two of seven well-marked cases of pulmonary tuberculosis no difference in physical signs followed the treatment; in the third case the improvement was "most marked;" in the fourth it was distinct, but less marked; in the fifth, decided; in the sixth, most marked; in the seventh, there was a positive arrest of the disease. The speaker also said that Dr. Trudeau had proved that creasote, even given in enormous doses, had no effect in checking the disease in guinea-pigs.

DR. J. P. CROZER GRIFFITH, of Philadelphia, read a paper entitled "Mid-systolic and Late-systolic Mitral Murmurs." He considered those murmurs that, though having the area of diffusion and the usual general symptoms of mitral regurgitant murmurs, yet do not occur until the middle or latter part of the systolic period. Three cases were reported. The first presented the symptoms of mitral regurgitation. The apex-beat was unattended with a murmur; then, after a pause, came a distinct musical murmur; and then, after another pause, the second sound. The case was thus a typical example of *mid-systolic* murmur.

The second case exhibited a murmur just before the second sound. Its area of diffusion was entirely that of a mitral regurgitant murmur. It was so close to the second sound, and at times so short, that its true nature was at first not certain. This case was therefore a typical instance of the *late-systolic* murmur.

The third case resembled the second in some respects. As in the second case, the murmur ran up to, but did not replace the second sound. Unlike the murmur in the second case, however, the murmur in the third case began earlier in the systolic period. It thus represents a combinaation of the mid-systolic and late-sytolic murmurs.

Murmurs of this sort are rare. But little reference is made to them in medical literature, and generally they are wrongly called "post-systolic." This term would

only be applicable on the theory that the systole lasted only to the beginning of the "short silence," and that the silence was cotemporaneous with relaxation of the ventricle.

It has been maintained by several investigators, who have drawn their conclusions from cardiographic studies, that the closure of the aortic valve does, indeed, occur, not at the beginning of the diastole, but at a slightly later period. This view, however, presupposes the existence of a physiologic aortic regurgitation. The recent studies of Martius, together with the older experiments of Ceradini, show that no such regurgitation takes place. The blood continues to stream from the ventricle until a very short period of time before the second sound is heard. During this period the ventricle maintains its contracted state, a backward whirl of blood in the aorta brings the leaflets in apposition, and then the actual recoil, taking place with the beginning of the diastole, simply puts the closed leaflets on the stretch and produces the second sound. This theory, so well sustained by the studies of the investigators named, renders it impossible that a murmur heard just before the second sound occurs could be due to friction of blood on the roughened aorta during its recoil upon the aortic valve—this being the opinion advanced by Skoda and others after him. Such a murmur is physiologically impossible.

The last two cases reported bear out this view from a clinical standpoint. The murmurs lasted quite up to the second sound, yet the cases were clearly instances of mitral regurgitation. The fact that the murmurs did continue so closely up to the second sound is also a proof that the "persistence time" of Martius, during which the ventricle simply remains contracted, must be of exceedingly short duration, as, indeed, this author admits. The very brief interval between the two parts of a double aortic murmur is also evidence of the briefness of this period.

The murmurs in all three cases varied considerably at different times. It would seem, then, very probable that regurgitation was taking place during nearly the whole of the systolic period, but that for some reason it only became evident as a murmur at certain portions of the period. In this respect the murmur is exactly analogous to the potential pre-systolic mitral murmur described by Bristowe.

The full text of the paper is to be published in the *American Journal of the Medical Sciences*.

SECOND DAY—MAY 25TH.

DR. W. T. COUNCILMAN, of Baltimore, opened the discussion upon "Dysentery." He considered the Etiology and Pathology, presenting the results of a study of thirty-four cases. He divided dysentery into three forms: (1) diphtheritic, (2) catarrhal, and (3) amebic. Diphtheritic dysentery is characterized by necrosis of the intestinal epithelium and a fibrinous exudation. It is the form usually encountered in acute epidemics. It may also appear in the course of a number of diseases, and may be produced by a number of causes. There is nothing in the anatomic lesions by which the action of a definite pathogenetic agent may be distinguished.

Catarrhal dysentery is characterized by an inflammation of the mucous surface of the intestine, leading to the production of shallow ulcers. Affections of the lymph-follicles are more common in catarrhal than in the other forms of dysentery. The statements made in connection with diphtheritic dysentery also apply to catarrhal dysentery. In both forms, abscess of the liver may appear, but is very rare.

Amebic dysentery is characterized by definite lesions in the large intestine and elsewhere. Eight of the thirty-four cases were instances of this kind. Four types of ulcers were described. The lesions always have the same character, and in them can be recognized the action of a common agent. There are extensive ulcerations of the intestines, which, in contradistinction to those of the other two forms, appear to be produced, not by extension downward, from the surface, but by a primary infiltration of the submucosa, with subsequent destruction of the overlying mucous membrane. The number of amebæ found is directly proportionate to the activity of the process. Clinically, the disease is characterized by remissions and great chronicity.

Abscess of the liver and lung is more frequent in amebic dysentery than in the other forms.

The disease is caused by the ameba dysenteriæ.

It forms the most of the cases of tropical dysentery.

DR. A. BRAYTON BALL, of New York, considered the "Symptoms, Complications, and Treatment of Dysentery." He first took up the differential symptomatology of (1) catarrhal colitis, (2) diphtheritic colitis, (3) amebic colitis, (4) secondary colitis. The most-marked characteristic of amebic dysentery is the absence of uniformity of the symptoms. The duration of the disease is longer than is that of the other forms of dysentery, chronicity being a marked feature. Dysenteric paralyses have been observed. Paraplegia is the most common. The palsies usually develop rapidly, but function is soon restored. Exceptionally, the palsy is more protracted. In some cases, no doubt, other causes than the dysentery have been operative, such as multiple neuritis, for instance. Dysentery seems to predispose to the development of anemia. A malarial complication is common. The febrile symptoms then usually display intermittency. The arthropathies sometimes observed in connection with dysentery may be considered as allied to other arthropathies of septic origin.

The treatment of dysentery is yet and must remain symptomatic. Ipecac has been extensively employed in India, and has reduced the mortality from 50 per cent. to 15 per cent. The drug must be given in heroic doses. The treatment has not been largely adopted in the United States, where smaller doses are usually employed. The administration of large doses of opium is illogical and inadvisable. The cure of dysentery does not consist in a suppression of the symptoms. Calomel is no longer recommended. The reaction against calomel, however, has, perhaps, gone too far. Corrosive sublimate may be given in small doses. Treatment by the rectum is growing in favor. Suppositories of ice, or of cocaine, or containing astringents have proved beneficial. The methods of rectal irrigation were described. In one case, Dr. Ball successfully employed large injections of quinine in conjunction with bismuth subnitrate. The possibility of damage to, or rupture of, the colon should lead to caution. A full meat diet is to be recommended. The nutrition must be sustained.

DR. W. W. JOHNSTON, of Washington, discussed "The

Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation." He first took up the method of irrigation with cold and warm water, giving Kent, of Bladensburg, credit for being the first to employ ice-water in this way in dysentery. Subsequently, O'Brien stated that in dysentery "the chief curative indication should be to pass up the gum-elastic tube and introduce it into the sigmoid flexure, in order to give exit to the accumulated and pent-up contents of the cecum and colon." Antiseptic irrigation has been recommended for more than a century. Among the agents thus used are Peruvian bark, chamomile flowers, calumba, charcoal, calcium chloride, sodium hyposulphite, creasote, carbolic acid, sodium salicylate, sodium borate. Two causes have coöperated to draw renewed attention to rectal and colon antisepsis: one is the growing belief in the specific and contagious nature, with the recent discovery of the ameba, of dysentery; the other is the dissatisfaction with other methods and the effort to find in this disease a direct, rational and successful treatment. The strong arguments for the superior advantages of antiseptic irrigation are found in the complete and successful manner in which it meets the peculiar pathologic conditions of dysentery.

Dysentery presents one noteworthy feature—the rectum and colon form a distensible cavity, closed below by the sphincter. This cavity, especially its sacculated and most-dilated lower portion, becomes distended with the products of the inflammatory process and of digestion, the whole being the seat of multiplying bacteria and undergoing disintegration. The sphincter becomes irritable, relaxes frequently but irregularly and spasmodically, and contracts abruptly and violently, closing the orifice before the rectum is completely emptied. Thus the rectum becomes like an acutely inflamed bladder. A portion of its contents is expelled; a residuum is always left — sometimes small, sometimes large, but always in a state of active decomposition. The first indication, then, is to empty the rectum; the second, to wash out the cavity and keep it empty and clean. The routine treatment of dysentery tends to aggravate the retention of noxious material; opium-suppositories paralyze the expulsive muscles, but do not relax the sphincter; the number of movements is lessened and they are smaller, but the dangers are increased in proportion to the apparent success of the treatment, and the more severe the case and the more energetic the treatment, the greater is the danger. In the earlier methods of rectal and colon treatment, water was thrown into the bowel, retained for a certain time, and then expelled. The procedure is objectionable when the disease is acute, and is better adapted to subacute or chronic cases. The process is not strictly one of irrigation. The only procedure worthy of this designation is that in which there is *free* and *immediate* escape of the fluid thrown in. To wash out the rectum a double, in-and-out, hard-rubber tube, passed into the bowel for from five or six to eight inches, may be employed. Through this is passed a current of water from a fountain-syringe. Two soft-rubber tubes, passed side by side, the larger for the escape-current, are better and more comfortable. The colon cannot be distended with water or be irrigated with the same facility as can the rectum. Water can be made to pass through the sigmoid flexure, but the passage of a tube is difficult. A partially flexible tube should never be used; nor does a small tube pass as readily as one that more nearly fills the bowel. Distending the rectum with water as the tube advances does not favor the passage as much as leaving the bowel empty. The tube finds its way better along the mucus-covered intestinal wall. On account of the difficulties to be overcome, irrigation of the colon must be practised with one tube. A half-pint or a pint of fluid is forced into the colon, and is at once permitted to escape.

Rectal irrigation is indicated in cases of catarrhal dysentery, the stools being small and containing blood and mucus; and in all cases in which the general and local symptoms are relieved by the treatment. If fever, delirium, restlessness, or symptoms of general infection continue, or if the stools are large, thin, with a gangrenous odor, containing blood, mucus, and shreds of tissue, then an attempt should be made to pass the tube into the sigmoid flexure for higher injection. The danger of perforating an ulcer should alway be borne in mind. The quantity of water employed varies; as a rule, the water should pass in and out until it returns perfectly clear. Provision must be made for the escape of all of the fluid injected. The frequency of irrigation depends upon the number of stools, the state of decomposition in the bowel, and other conditions. A good rule is to try to prevent the patient from having any stools at all. The bowel should be emptied only through the introduced tube; at first once in three hours, later three times a day. The rule is to keep the rectum clean. The irrigating fluid may consist of water only, hot or cold, or a non-irritating antiseptic may be added. Mercuric chloride, in solutions of 1 : 5000, has been successfully employed. Tannic acid, salicylic acid, thymol, aseptol, creolin, zinc sulpho-carbolate, alum, hydrochloric acid, carbolic acid, boric acid, the sulphites, and hyposulphites have all been employed.

Dr. W. C. Dabney, of Charlottesville, Va., presented "A Contribution to the Study of Hepatic Abscess," based upon 108 cases collected from various sources. He indicated that suppuration may be induced in the liver by bacteria or their products brought by the bloodvessels. Infection through the hepatic artery and vein are extremely rare; the portal system of vessels is the most common channel of infection, especially in connection with ulcerative disease of some associated organ. In a considerable proportion of cases, however, there is no history of previous disease of the intestine or of any organ connected with the portal system. The individual diseases and injuries of the organs connected with the portal system to which hepatic abscess has been attributed are: dysentery; appendicitis; gastric and duodenal ulceration; operations on, or diseases of, the rectum; typhoid fever; suppuration of the umbilical vein in infants; ulceration of the cervix uteri; peri-uterine inflammation; suppurating ovarian cysts; lithotomy operations. Tuberculous ulceration of the intestinal seems not to lead to abscess of the liver. The ulceration of typhoid fever is a rare source of such abscess. Ulceration of the bowel, which often causes dysenteric symptoms, and is spoken of as dysentery, has been considered the most common cause of hepatic abscess, but it has been observed that the dysentery associated with abscess was unlike the common form and

was often mild in character. It appears that the development of abscess of the liver is not due to the character of the intestinal ulceration, but to that of the substances formed in the ulcer and carried thence to the liver. Abscess of the liver may develop as early as two weeks after the commencement of an attack of dysentery, but the usual interval is from four to twelve weeks. It is almost impossible to state how long a time must elapse after apparent recovery from dysentery before the patient can be considered free from the danger of hepatic abscess. Ulceration may long persist in the absence of symptoms. Hepatic abscess may remain latent for an indefinite time. Dysentery may recur one or several times in the same person, at intervals of several months or even years.

The entrance of pyogenic substances into the liver by the lymphatics is of questionable occurrence. It is possible for the suppuration in the liver to extend to the adjacent pleura and lung through the lymphatic vessels of the liver. Suppuration may occur around the bile-ducts and lead to abscess-formation from : (1) retention of bile, (2) the presence of gall-stones, (3) the entrance of intestinal worms into the ducts, (4) probably, also, from a cholangitis of unknown origin. The extension of suppurative inflammation from adjacent parts or organs may occasionally induce hepatic abscess. Injuries to the liver lead to hepatic abscess in a large number of cases. These injuries may be penetrating wounds, simple contusions without external injury, or they may be causes of fracture of the ribs, and lead to hepatic abscess, and possibly cause hepatic abscess secondarily.

Certain general local conditions are favorable to the development of hepatic abscess. A hot climate is usually considered a potent factor. Heat alone, however, is probably not the active agent; most likely it furnishes one of the conditions requisite for the growth and development of amebæ, so that it is probable that the abscesses that are greatly influenced by climatic conditions are amebic in character. Chilling of the overheated body is thought to be a cause, and it is claimed that horseback riding is likely to induce hepatic abscess. The weight of evidence seems to be clearly against the influence of malaria as a cause of abscess. It is possible that the real connection between malaria and hepatic abscess resides in the fact that the same conditions are favorable for the development of the plasmodium malariæ and the ameba of dysentery. Malaria may possibly weaken the resisting-power of the liver, and thus act as a cause. Intemperance is universally recognized as a predisposing cause of hepatic abscess in India, and it is probable that it is so elsewhere. In India even moderate drinkers are liable to hepatic abscess. Adult males are far more liable to abscess than are children and women. Young people, however, are by no means exempt.

Abscesses are usually situated in the right lobe of the liver. Even when there are multiple abscesses the right lobe is chiefly involved. It would, furthermore, seem that the upper part of the right lobe is involved rather more frequently than is the lower part.

The number of abscesses is variable. In cases of pyemic origin the abscesses are, in most cases, multiple and small. In cases dependent upon other causes, the abscesses are usually few. In thirty-one cases of dysentery or diarrhea, or in which ulceration of the large bowel was found at the autopsy, there were multiple abscesses in fifteen cases. In fourteen cases there was but one abscess. When multiple abscesses exist, the longer the case lasts the greater is the probability that the adjacent abscesses will communicate with one another. This, however, does not justify delay in surgical treatment, because the longer the duration the greater, as a rule, is the destruction of hepatic tissue, and the greater is the danger from exhaustion or from rupture of the abscess in some unfavorable direction.

The contents of hepatic abscesses sometimes undergo a caseous change that results in increased viscidity. Frequently the contents are sterile. The presence of liver-cells is not common. Their presence would be diagnostic.

The condition of the walls of the abscess and of the surrounding hepatic tissue will in a great measure depend upon the duration of the abscess. In the early stages there is no sharp line of demarcation, but later on the walls are distinct and ragged, and still later they may be thick and fibrous. The surrounding tissue is often sound, but it may be fatty. Adhesions with neighboring parts may or may not form.

The symptoms of hepatic abscess are usually well marked, but sometimes they are obscure and occasionally are entirely wanting. The onset of symptoms is usually gradual, but occasionally sudden. Of the usual symptoms of pus-formation, rigors, fever and sweating, fever is present in a very large proportion of cases. Jaundice seems to be present more commonly than is usually supposed. An earthy tint of the skin is regarded as of common occurrence. In some cases ascites is present. This may depend upon portal phlebitis or upon dense adhesions. The digestive symptoms are variable. There is usually complete loss of appetite, but occasionally the appetite remains good. Nausea and vomiting are present in some cases. Diarrhea is present in a considerable number. There is little disturbance of the nervous system and of the circulatory system. Disturbances of the respiratory system, such as dyspnea, cough, bronchial râles, and pleuritic friction-sounds, are quite common. Disturbances of the respiratory system may depend upon pain occasioned by breathing; upon pressure of the abscess upward toward the lung; by the bursting of the abscess into the pleural cavity, and by the existence of pleurisy as a complication. Disturbances of the urinary system are uncommon. Emaciation is probably present in a greater or less degree in nearly all cases.

Important evidence is furnished by physical examination of the liver. Pain and tenderness are common. Enlargement of the liver is present in almost all cases. Fluctuation may sometimes be detected. Aspiration may afford diagnostic evidence. Hepatic abscesses may be complicated by localized peritonitis, by adhesions, by hemorrhage into the bowel, by pleurisy, by pneumonia, by infarction of the spleen, by meningitis, by caries of the ribs. It is said that absorption of the contents of hepatic abscess may occur, but such a result is extremely doubtful. Rupture of the abscess is comparatively common. This may occur into a bronchus; into the pleura; into the colon; into the stomach; into the ab-

dominal cavity; outward through the abdominal walls, and into the pericardium.

Caseation and calcification of the contents of hepatic abscesses are rare terminations. In a large proportion of cases death is a direct result of hepatic abscess.

The causes of death are exhaustion, septic infection, peritonitis, destruction of a large amount of hepatic tissue, and complications of other kinds than peritonitis.

The duration of fatal cases may be from a few days to six months. The mean is from six weeks to three months. The treatment is distinctly surgical. The methods that have been proposed are: Aspiration alone; aspiration and subsequent washing out of the cavity with some antiseptic solution through the aspirator-needle; the use of a large trocar and canula alone, the canula being subsequently left in to secure drainage; incision; incision and drainage; incision and washing out with some antiseptic solution with or without subsequent drainage. Practically, the treatment may be reduced to aspiration; incision and drainage; the use of antiseptic washes.

The following are the officers elected for the ensuing year:

President.—Alfred L. Loomis.

Vice-President.—Reginald H. Fitz.

Treasurer.—William W. Johnston.

Secretary.—Henry Hun.

Recorder.—I. Minis Hays.

New Member of Council.—A. Brayton Ball.

Representative in Council of Congress of American Physicians and Surgeons.—William Pepper.

(To be concluded.)

NEWS ITEMS.

Program of the Section of Neurology and Medical Jurisprudence of the American Medical Association.—

Tuesday, June 7th.—Afternoon Session.

1. Address of the Chairman. "Organization and Work of the Section of Neurology and Medical Jurisprudence," Harold N. Moyer, Chicago.

2. "The Relation of Physical Violence to Hernial Protrusion through the Abdominal Walls, and its Medico-legal Aspect," Thomas H. Manley, New York, N. Y.

3. "Consent in Medicine and Surgery," Clark Gapen, Omaha, Neb.

4. "Responsibility in Will-making," Henry A. Chaney, Detroit, Mich.

5. "Aphasia," Philip Zenner, Cincinnati, O.

6. "Hysterical Concomitants of Organic Nervous Disease," C. H. Hughes, St. Louis, Mo.

7. "Infantile Hemiplegia with Aphasia," Joseph Eichberg, Cincinnati, O.

8. "Retinal Excitation of Cortical Origin in Visual Hallucination," C. G. Chaddock, Traverse City, Mich.

Wednesday, June 8th.—Morning Session.

1. "Electrical Execution," A. D. Rockwell, New York, N. Y.

2. "The Electrodes and their Application in Electrocution," George E. Fell, Buffalo, N. Y.

3. "The Reflex Theory in Nervous Disease," L. Bremer, St. Louis, Mo.

4. "Reflex Genito-urinary Neuroses," G. Frank Lydston, Chicago, Ill.

5. "Three Phases of Para-myoclonus and the Use of Phonograph in a Case," Clark Gapen, Omaha, Neb.

6. "Nerve Regeneration after Suture," W. H. Howell, Ann Arbor, Mich.

Afternoon Session.

1. "Syringomyelia: Our Present Knowledge of It," Landon Carter Gray, New York, N. Y.

2. "A Case of Syringomyelia," William C. Krauss, Buffalo, N. Y.

3. "Spinal Localization," Archibald Church, Chicago, Ill.

4. "Lateral Sclerosis, and Its Treatment," W. H. Walling, Philadelphia, Pa.

5. "Heredity in Primary Degeneration of the Nervous System," Sanger Brown, Chicago, Ill.

6. "Surgical Interference with Cerebral Diseases of Childhood," Frank P. Norbury, Jacksonville, Ill.

7. "A Case of Tumor of the Pons in which Tapping of the Lateral Ventricles was done for the Relief of Intra-cranial Pressure," Theodore Diller, Pittsburg, Pa.

8. "Neuralgia of the Abdominal Sympathetic," Harold N. Moyer, Chicago, Ill.

Thursday, June 9th.—Morning Session.

1. "The Relation of our Social Organization to Insanity," David Inglis, Detroit, Mich.

2. "Psychiatric Demography in Chicago," James G. Kierman, Chicago, Ill.

3. "Insanity and Neuroses in Fiction," H. C. B. Alexander, Chicago, Ill.

4. "The Relation of the Paranoiac to Society, and the Responsibility of the Civil Authorities for the Harm He Does," H. A. Tomlinson, St. Peter, Minn.

5. "A Case of Transitory Mania, with Peculiar Sequelæ," G. R. Trowbridge, Danville, Pa.

Afternoon Session.

1. "The Law of Periodicity in Inebriety," T. D. Crothers, Hartford, Conn.

2. "Insanity Following the Keeley Treatment for Inebriety," Richard Dewey, Kankakee, Ill.

3. "Additional Evidences of the Somatic Origin of Inebriety," Eugene S. Talbot, Chicago, Ill.

4. "The Successful Management of the Alcohol Habit," C. H. Hughes, St. Louis, Mo.

5. "On Recent Judicial Evolution as to the Criminal Responsibility of Inebriates," Clark Bell, New York, N. Y.

6. "Delusions as to Locality; a Frequent and Prominent Mental Symptom in Alcoholic Dementia," L. D. Mason, Boston, Mass.

7. "Some Recent Researches and Possible Investigations Regarding the Establishment of Personal Identity," Irving C. Rosse, Washington, D. C.

8. "Angina Pectoris," C. B. Mayberry, Danville, Pa.

Friday, June 10th.—Morning Session.

1. "A Healthy Brain is Necessary to a Free Will," C. G. Comegys, Cincinnati, O.

2. "Moral Insanity and Insane Morality," O. Everts, College Hill, O.

3. "Feigned Insanity," F. W. Harmon, Carthage, O.

4. "How Shall Responsibility be Measured in Criminal Cases," A. B. Richardson, Cincinnati, O.

5. "Some Characteristics of the Human Mind when Placed at a Disadvantage; a Psychological Study," T. L. Wright, Bellefontaine, O.

Program of the Section of Medicine of the American Medical Association.—

Tuesday, June 7th.—Afternoon Session.

1. "A Healthy Brain is Necessary to a Free Will," by C. G. Comegys, M.D., Cincinnati, Ohio. 2. "Epilepsy," by M. M. Leahy, M.D., Chicago, Ill. 3. "Etiology of Specific Disease," by R. French Stone, M.D., Indianapolis, Ind. 4. "Recent Investigations of the Etiology of Diabetes Mellitus," by S. P. Kramer, M.D., Cincinnati, Ohio. 5. "La Grippe," by John E. Link, M.D., Terre Haute, Ind. 6. "A Modified Form of Continued Fever Following the Epidemic La Grippe," by John H. Hollister, M.D., Chicago, Ill. 7. "Positive and Negative Medication," by Bedford Brown, M.D., Alexandria, Va.

Wednesday, June 8th.—Afternoon Session.

8. Address of the Chairman. "Relations of Bacteriochemical Results to Prophylaxis and Therapeutics," by R. T. Edes, M.D., Jamaica Plains, Mass. 9. "Catarrhal Gastritis," by Harold N. Moyer, M.D., Chicago, Ill. 10. "A Case of Amebic Dysentery," by E. P. Gerry, M.D., Jamaica Plains, Mass. 11. "Retained Feces," by Walter S. Christopher, M.D., Chicago, Ill. 12. "Transmission and Behavior of Typhoid Poison as Observed in Country Practice," by Lewis M. Davis, M.D., Farmland, Ind. 13. "A Case of Fermentive Poisoning," by J. T. Axtell, M.D., Hartford, Conn.

Thursday, June 9th.—Morning Session.

14. "Some Non-valvular Heart Murmurs," by N. S. Davis, Jr., M.D., Chicago, Ill. 15. "The Vertigo of Arterio-sclerosis," by Archibald Church, M.D., Chicago, Ill. 16. "The Importance of Position in Examination for Diseases of the Heart," by O. B. Campbell, M.D., Ovid, Mich.

Afternoon Session.

17. "Rheumatic Pleuritis," by E. L. Shurly, M.D., Detroit, Mich. 18. "Conditions of the Pulse and Heart in Phthisis," by N. S. Davis, Jr., M.D., Chicago, Ill. 18. "The Genesis of Pneumonia," by W. W. Pennell, M.D., Fredericktown, O. 19. "The Cardiac Indications in the Treatment of Pneumonia," by J. M. Anders, M.D., Philadelphia, Pa. 20. "Diet and Regimen in Pulmonary Consumption," by Edward F. Wells, M.D., Chicago, Ill. 21. "Additional Evidences of the Value of Forced Respiration, Fell Method, in Opium Narcosis," by George E. Fell, M.D., Cincinnati, O. 22. "A Clinical Note on Rötheln; Period of Incubation," by Charles A. Hough, M.D., Lebanon, O.

Section on Oral and Dental Surgery of the American Medical Association.—The following essayists and essays have been secured:

1. Dr. J. Taft.

2. Dr. H. Gradle, Chicago. "Experiences in Empyema of the Maxillary Sinus."

3. Dr. G. S. Junkerman, Cincinnati. "Oral Manifestations in Metallic Poisonings."

4. Dr. John L. Gish, Jackson, Mich. "Diseases of the Gums."

5. Dr. T. D. Crothers, Hartford, Conn. "On Diseases of the Teeth and Jaws in Inebriates."

6. Dr. J. Smith Dodge, New York. "The Local and General in Dental Pathology."

7. Dr. G. Lenox Curtis, New York. "Restoration of Sight Following Operation for Necrosis of the Sphenoid Bone."

8. Dr. W. C. Barrett, Buffalo, N. Y. "The Condition of the Dentine in Pulpless Teeth."

9. Dr. M. H. Fletcher, Cincinnati. "A Universal Mento-dental Splint, with Report of Case."

10. Dr. E. S. Talbot, Chicago. "Arrest of Development and Decalcification of the Enamel and Dentine."

11. Dr. John S. Marshall, Chicago.

12. Dr. G. W. Weld, New York. "The Treatment of Anemia by a New Preparation of Iron, Illustrated by the Hemoglobinometer."

The Medical Society of New Jersey will hold its next annual meeting at Atlantic City, on June 28 and 29, 1892. A special train will leave Camden on Tuesday at 12.15 P.M. for the accommodation of those who may wish to attend the meeting.

The Mississippi Valley Medical Association will hold its eighteenth annual session at Cincinnati, on October 12, 13, and 14, 1892.

Books and Pamphlets Received.

Orthopedic Surgery as a Specialty, and Diseases of the Hip-joint. By Arthur J. Gillette, M.D. Reprint, 1892.

Medical Orthoepy. By J. F. Oaks, M.D. Reprint, 1892.

Empiricism: Rational Practice, etc. A Lecture to Medical Students. By Charles S. Mack, M.D. Reprint, 1892.

Report of the Wills Eye Hospital for 1891. Philadelphia, 1892.

Ataxia. A Clinical Lecture. By J. T. Eskridge, M.D. Reprint, 1892.

Personal Experience of a Physician. A Review of "Christ and the Temperance Question," in *The Christian Union*. By John Ellis, M.D. Pamphlet. Philadelphia: Hahnemann Publishing House, 1892.

Spectacles and Eye-glasses; Their Forms, Mounting, and Proper Adjustment. By R. J. Phillips, M.D. With 47 Illustrations. Philadelphia: P. Blakiston, Son & Co., 1892.

Eleventh Annual Report of the State Board of Health of Illinois, for the Year ending December 31, 1888. With an Appendix Containing the Official Register of Physicians and Midwives, 1892. Springfield, Illinois, 1892.

Studies upon Injuries of the Kidney, Nephro-lithotomy, and Nephrorrhaphy. By Aug. Schanhuer, M.D. Pamphlet. Louisville, 1892.

The Present Status of Homeopathy, and Its Future. By H. R. Stout, M.D. Reprint, 1892.

The Epidemic of Yellow Fever in Jacksonville, Fla., in 1888. By H. R. Stout, M.D. Reprint, 1890.

The Medical Specialists. By L. H. Taylor, M.D. Reprint, 1892.

Cases and Treatment of Mastoid Disease. By Lewis H. Taylor, M.D. Reprint, 1892.

Lessons of Public Sanitation and Their Historical Development. By Dr. Max Schottelius. Specially Translated by Lewis H. Taylor, M.D. Reprint, 1892.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

INFECTIOUS DISEASE IN CITIES; WITH ESPECIAL REFERENCE TO DENVER.

BY HENRY SEWALL, PH.D., M.D.,
ASSISTANT HEALTH COMMISSIONER,
DENVER, COL.

STEP by step science is increasing our knowledge of etiology by adding to the list of microbic diseases. To-day we admit the parasitic origin of maladies that, ten years ago, we thought typically non-parasitic. To-morrow we may include in the microbic list ailments that now give no hint of their infectious nature. A recent writer[1] concludes from his personal researches that, to the list of proven infectious diseases, we must now add articular rheumatism, pharyngitis, tonsillitis, intercostal neuralgia, and some forms of sciatica.

Though science has proven the infectious nature of many diseases, medical art has, in most cases, failed in settling on definite modes of treatment, still less in intelligently annulling the conditions under which these diseases flourish.

In the present state of knowledge, we are justified in stating that all infectious diseases are each caused by a distinct chemic or anatomic entity that enters the body from without. If this morbific agent be kept out of the body, no sickness results; if it be allowed to penetrate the body, the effect, whether simply negative or positive in sickness or death, depends altogether on the relative vital resistance of the invader and the invaded. We can properly go a step further, and declare that the causes of infectious diseases are living microörganisms that, as can be proved by laboratory experiment, need for their development and activity certain conditions of heat, moisture, illumination, and food-supply.

We may generalize still further: It is well known that the processes of putrefaction and fermentation are simply the effects of the development of certain microörganisms, and are the signs of living agents operating on dead matter—as Huxley puts it, "Putrefaction is a concomitant, not of death, but of life." The microörganisms of disease need for their development a food-supply of decomposable or, roughly speaking, putrescible matter. Every community is continually producing quantities of such matter in the animal and vegetable wastes incident to living; in the kitchen garbage and slops, in fecal matter and in urine, in sweat and in the vapors of respiration. It follows that the more completely the soil and the drinking-water of a neighborhood are saturated with these putrescible waste-matters, the more likely it is that disease-germs once dropped upon them will abide and flourish—not that so-called "filth" *creates* infectious diseases, but that it preserves and nurtures them when once they are implanted. This appears a simple and self-evident proposition, yet it is for the practical sanitarian a bulwark of defence that alone stands between him and the assaults of those whose self-interests his duties compel him to disturb.

Filth harbors disease. We must fix on this general fact as the outcome of all human experience. For the more we consider the conclusions of different scientific investigators concerning the special conditions that determine various diseases, the more confused and uncertain must our ideas become in proportion as we give weight to authorities. It is not long since Koch and his corps of assistants, working in Egypt and in India, proved to their own satisfaction that the cholera, endemic there, was produced by organic contamination of drinking-water, and, moreover, that the specific agent of infection was a demonstrable microörganism, the so-called "comma bacillus." On the other hand, Dr. J. M. Cunningham, who for thirty-eight years practised medicine in India, and for twenty years was chief of the Indian Sanitary Bureau, with unequalled advantages for comparative observation, says, in his work on the subject, that no outbreak of cholera in any part of India has been shown to have etiologic relation to the drinking-water, and when such a relation seemed to exist, closer investigation showed the error of the belief.[1]

Again, the opinion is world-wide that there is a causal relation between the condition of the drinking-water and the development of typhoid fever in a community. The evidences and authorities in favor of this belief are almost numberless. Yet for years one of the foremost sanitarians of the age, Von Pettenkofer, of Munich, has declared against the connection between the water ingested and the occurrence of typhoid fever.

Not long ago, Dr. Kratter[2] published the results

[1] E. Reger: Zur Lehre von den Contagiösen Infectionskrankheiten. Berlin, 1890

[1] Quoted from Kratter, "Studien über Trinkwasser u. Typhus." Gratz, 1886.

[2] Kratter: Loc. cit.

of a series of investigations that he had carried on for five years in the town of Gratz, on the connection between the purity of the drinking-water and the development of typhoid fever. Kratter found no such relation; on the contrary, he discovered that the greatest number of cases of typhoid fever developed in neighborhoods supplied with the purest, and the smallest number in districts furnished with the impurest drinking-water. On the other hand, Kratter found that the people living in a part of the city in which the underlying bed-rock rose in a ridge toward the surface, giving a free subsoil drainage, though their habits were ultra-filthy, and though they used the chemically bad drinking-water, were singularly free from typhoid fever. An American hygienist, Professor V. C. Vaughan, of the University of Michigan, after an exhaustive study, chemic and bacteriologic, of a number of specimens of drinking-water that were supposed to have caused typhoid fever, was unable to show in them the presence of any specific element of contagion.

On the other hand, v. Födor, one of the ablest living bacteriologists, working in the city of Budapest, found a close relation between the condition of the drinking-water and the development of cholera, typhoid fever, diarrhea, and smallpox; while no such relation was apparent in the development of intermittent fever, scarlet fever, diphtheria, or mumps.

The apparent discrepancies in the conclusions of advanced scientific workers will all be harmonized in time. In the meanwhile, we may rest secure in the belief that a healthy community in a healthy neighborhood presupposes pure food, pure water, pure air, pure soil; and the best provisional definition of purity is the absence of the waste-matters produced by organized life, and of deleterious chemicals of whatever sort.

Though a closer study of micro-biology shows that every specific pathogenic microörganism grows best under certain definite conditions of heat, food, and moisture, it is a broad fact of inestimable practical value, and one that has been established by the experimental researches of sanitarians in the last two decades, that the sanitary measures that are successful in limiting the spread or preventing the development of any single infectious disease, as, *e. g.*, cholera, are, at the same time, efficacious against all other infectious diseases.[1]

Using this conclusion as a starting-point, we are prepared to enter upon a study of the conditions that determine the existence and spread of infectious disease in Denver—not by theoretic generalizations, but by exact observation of the varied conditions under which flourish individual diseases. In order to carry out such a research, we must have accurate information as to the total number of cases affected with a definite disease, and their distribution in the city. There are only two infectious diseases that are sufficiently common to make them of great importance, and concerning which our imperfect laws are sufficiently stringent to allow us to rely upon a full report of cases—namely, scarlet fever and diphtheria. In some other countries, as in England, probably on account of peculiar meteorologic conditions, whooping-cough stands among the most fatal infectious diseases, but with us it seems to be comparatively unimportant.

The vital statistics of Denver regarding scarlet fever and diphtheria, show that in 1890, with a census population of 106,713, there were reported 276 cases of scarlet fever, with a mortality of 4.7 per cent.; and 695 cases of diphtheria, with a mortality of 31.6 per cent.

In 1891, with an estimated population of 113,874, there were reported 256 cases of scarlet fever, with a mortality of 6.9 per cent., and 440 cases of diphtheria, with a mortality of 32.9 per cent. One is startled at the high mortality due to diphtheria. But the statistics of cases admitted to the hospitals of Paris between 1866 and 1890 show a much higher death-rate;[1] and in a recent epidemic in the town of Heywood, in England, more than 50 per cent. of the cases reported died.

I think it may be taken for granted that absolute accuracy in any table of vital statistics is impossible. Clerical errors are prone to arise in computations involving thousands of complex numerical data; the conclusions presuppose a full report of all cases, and, what will be probably forever hopeless of attainment, a uniform diagnosis of the true nature of maladies.

Thus, in the Paris hospitals, between 1866 and 1890, the absolute mortality from diphtheria increased about fivefold, though the proportion of cases ill with the disease increased nearly tenfold. A somewhat similar increase of diphtheria, within the period mentioned, is recorded throughout France. In England, since the national introduction of definite sanitary measures, especially since 1875, there has been a remarkable diminution in the rate of mortality from infectious diseases, with the exception of diphtheria.

The figures show that, in this disease, there has been both an absolute and relative increase of mortality. A writer in the *Lancet* has recently offered an explanation for this strange result by calling attention to the fact that, with the apparent increase of diphtheria, there was more than a cor-

[1] Revue d'Hygiene, 1891, p. 45.

[1] Idem, 1891, p. 687.

responding decrease in the reported cases of scarlet fever and various throat-affections—leading to the suspicion that, with the more perfect development of the art of diagnosis, or, perhaps, as the result of a change in medical fashion, many diseases now regarded as diphtheria were formerly ascribed to other causes.

The first essential to any intelligent measures for the repression of infectious diseases is an inquiry into the manner of their propagation and dissemination.

We are justified in making the dogmatic assertion that infectious diseases may be distributed in two different ways. First, the disease may be transferred directly from the sick person to the body of one who is well, *i. e.*, through personal infection. Second, the contagium, or disease-germs, cast out by the patient may remain indefinitely in the room or on the clothes, or other articles surrounding him, and, after a longer or shorter time, find entrance into the bodies of persons coming in contact with them. Again, it can hardly be denied that disease-germs cast off from the body of a sick person come at once under conditions that are either favorable or unfavorable to their preservation. Fortunately for the maintenance of our species, the usual conditions in which these germs find themselves on being cast off from their host, are unfavorable to their life. Thus, it is sufficiently proven that sunlight is a powerful germicide; also, oxygen with, in some cases, the assistance of moisture, and, in others, of dryness, destroys the pathogenic organism. Occasionally, however, the disease-germs emanating from the body of the sick fall into an environment favorable to their life, or on a soil suitable to their reproduction. Here, then, the respective disease becomes endemic; and it is of the first importance for us to know the external conditions that favor the multiplication of each micro-organism.

To summarize the statements just made: The disease-germ has two loci of propagation—first, outside of the body, in soil suited to its growth, in which case its effects are invisible to us; second, inside of the body of lowered physiologic resistance, and then disease is the result.

It may be mentioned in passing that all authorities seem to agree that the bacillus of typhoid fever lives best in moist ground, somewhat under the surface, and is quickly killed by desiccation and sunlight; also, what is especially important in this discussion, that the germs of diphtheria live on the surface of the ground, and that moisture seems necessary to their reproduction.

Fecal matter is said to constitute particularly good soil for the preservation and propagation of most disease microörganisms. On the other hand, ordinary soil has extraordinary powers of self-purification, and soon destroys the vast majority of micro-organisms that fall upon it. This is the property made use of in the purification of water by interrupted filtration. It is generally admitted among bacteriologists that the number of microörganisms in the soil diminishes as we dig below the surface, and that at a depth of from eight to ten feet they totally disappear.

Next in importance to the determination of the conditions under which pathogenic organisms are preserved and reproduced, is the question as to the manner and circumstances amid which the infectious principle enters the bodies of its victims. I do not hesitate to assume, again, that the infectious principle is a living microörganism.

We are well within the bounds of proven fact when we assert that each microörganism has a cycle of existence, during the various stages of which it shows differences of resistance to the action of destructive agencies. It is, perhaps, a permissible assumption, that, at certain stages of its development, the pathogenic germ has unusual propagating energy, and it is while in this physiologic condition that it would prove most likely to cause infection.

Apropos of this question, it would be exceedingly interesting to review some conclusions recently expressed in a remarkable work on the dissemination of infectious diseases, by Dr. E. Reger, physician to the Military Training-school at Potsdam, Prussia.[1]

For a number of years Reger has been in a position to make exact clinical observations on the cadets in training at the military school mentioned. The conditions of discipline appear to have been such that the hourly distribution and associations of the cadets were known, so that the path taken by any infectious disease in its progress could be accurately determined. Under these circumstances Reger studied the dissemination of a number of infectious diseases, including diphtheria, scarlet fever, measles, and mumps.

Naturally, as soon as the first symptoms of infectious disease appeared in any cadet, the patient was at once removed to and maintained in the hospital. It was usually found, however, that when a certain cadet became ill with a disease that proved to be infectious, other cases afterward appeared, and always among those who had been in closest personal relation with the original victim.

This is the briefest possible statement of the grounds on which Reger makes the important announcement that "infectious diseases are spread by personal contact with sick persons, and not, usually, by contact with infected articles or places." Moreover, according to Reger, it is either in the period

[1] Op. cit.

of commencement or at the acme of the disease that the patient is most dangerous as a source of infection. In the scaling stage, or declining period of the disease, the danger of infection is comparatively small.

Reger's idea is that the infecting microörganism has most virulent nutritive and propagating powers at only a definite stage in its cycle of existence, and this is when it is actively multiplying at the commencement or height of an infectious attack. The microörganisms contained in the scales of desquamation have already nearly lost their vitality, and but feebly attack any physiologic surface on which they may fall.

This work appears to be an important contribution to the science of epidemiology, and the general conclusions reached are not necessarily invalidated by the exceptions to their truth that will at once suggest themselves to every mind. One other conclusion of Reger's is appropriate to our subject, namely, that in nearly all cases infection is of a mixed type—in other words, in most maladies various pathogenic organisms of different specific natures are active within the body, and only as one or another of them gets decidedly the upper hand in its development can we definitely characterize the disease as diphtheria, scarlet fever, etc. Both at the beginning and at the ending of an epidemic, especially, other microörganisms come more to the foreground, and we have tonsillitis, sore-throat, etc. Only one disease, according to Reger, constantly breeds true and reproduces its like in individual after individual, and that is measles. The course of other infectious diseases, as diphtheria and scarlet fever, in a succession of persons who have serially inoculated each other, is interrupted by diseases that are, in general, similar to them, but by no means have their specific character.

In the foregoing lines I have endeavored to state, though in the merest outline, some general considerations that must be borne in mind in any intelligent attempt to cope with infectious disease.

The first fact to determine, in studying the influences that engender contagious diseases in Denver, is the local distribution of the maladies.

This has been most satisfactorily accomplished by marking on a map of the city the exact location of each case of infectious disease as it is reported. In this way are marked on the same map, in different colors, all reported cases of diphtheria, scarlet fever, and typhoid fever. Separate maps are used to show the distribution of disease for each month, and also for the quarter, half, and full year. A glance at such a map indicates at once a tendency of the diseases to fall into groups or follow certain neighborhoods. The cause of this grouping is one of the most difficult problems with which we have to deal, and its discussion will be, for the present, delayed. It is the present policy of the Health Department to submit all premises on which the presence of infectious disease is announced to thorough sanitary inspection within a month after the case has been reported.

The inspector for this work is a medical man, chosen with especial reference to his tact and address. He is furnished with a note-book having printed on one side of each sheet the following list of questions to which written answers are returned:

No. —. Date —. Name —. Residence —. Number in family —. Habits —. Previous sickness in family —. Disease —. Time of —. Number affected —. History —. House: age —; frame or brick —. Number of floors —. Number of rooms —; living, sleeping —; bath, closet, kitchen sink, connected with —. House heated by —. Rooms ventilated —; dry, damp —. Plumbing —. Cellar: size —; walls —. Floor: damp, dry —; ventilated —. Ventilation under house —. Previous sickness in house —. Premises: number of lots —; proportion covered —. Sewer connection —. Cesspool: leaking, tight —; privy vault: leaking, tight —; hopper, plunger —. Water-supply —. Milk-supply —. Ice-supply —. Disposal of slops —; of garbage —. Adjacent premises: condition —, alley —, ditch —, slope of surface.

On the reverse side of the sheet is a space for a diagram of the premises, and for remarks appropriate to the special case; these are frequently of more value than the answers to the printed questions. Every inspection is numbered and properly listed in a card catalogue so that it may be referred to at a moment's notice. It may be remarked, in passing, that a somewhat similar inspection record-book is in use by the plumbing inspectors, and another appropriate to a full sanitary investigation of the dairies supplying milk to the city.

There have, thus far, since August, 1891, been recorded 500 general sanitary inspections of different premises harboring contagious disease. In 237 cases the inspection was made on account of the occurrence of scarlet fever, and in 263 cases because of diphtheria—that is, 47.4 per cent. were cases of scarlet fever, and 52.6 per cent. of diphtheria.

Any conclusions based on the data thus obtained must be drawn with exceeding care, lest they have to be reversed with the wider knowledge of increased experience.

The first essential to the healthfulness of a household would seem to be cleanliness in the habits of the people. It is believed that a tolerably correct idea of the general mode of life of a family, as affecting its health, can be gained even in the limited time devoted to an official inspection. Con-

cerning the habits of households afflicted with infectious disease our statistics show that, in the case of scarlet fever, 37 per cent. of the families are represented as of good or clean, and 62 per cent. as of bad or filthy habits; while in the diphtheria households only 29 per cent. are good and 70 per cent. bad; that is, on the whole, the better class of people incurs scarlet fever, and the lower class suffers from diphtheria.

The material of which a house is built would seem to have some relation to its sanitary condition. Of the houses harboring scarlet fever we find 79 per cent. brick, 15 per cent. frame, and less than ½ per cent. tents; while in those with diphtheria, 72 per cent. were brick, 25 per cent. frame, and 3 per cent. tents. Tent life affords no protection against disease when, as is usually the case, people living in this way have habits that are ultra-filthy. We are, however, at once struck by the high percentage of frame houses, particularly in cases in which diphtheria has occurred. In the thirty-first sewer district, containing probably as large a proportion of frame houses as any similar area in the city, it has been found by actual count that the frame houses constitute less than 25 per cent. of the total number of dwellings; but more than 25 per cent. of the cases of diphtheria reported occurred in frame buildings. It may be added that diphtheria seems particularly common and especially virulent in cases in which old boards, soaked with moisture, are found either in or about the infected house.

The ventilation of the apartments of a house has a very broad sanitary bearing as determining the physiologic resistance of the occupants against any disease. We find recorded that in the scarlet fever houses the rooms were well ventilated in 41 per cent. and badly ventilated in 58 per cent. of cases; while in the diphtheria houses the ventilation was good in only 32 per cent. and bad in 67 per cent.

From time immemorial, dampness in living and sleeping apartments has been regarded as evidence of insalubrity. In this dry climate, it is a point of especial significance. According to the view of modern science, dampness is necessary to the reproduction of pathogenic organisms, which are, moreover, held in its grasp and prevented from escaping. Of the scarlet fever houses, 73 per cent. are recorded as dry, and 26 per cent. as damp. Of the diphtheria houses only 67 per cent. are dry and 32 per cent. damp.

We now come to a sanitary question that seldom seems to trouble the artistic mind of the architect, and still less disturbs the practical nature of the contractor and builder. Every house set upon the ground acts as a chimney for the gases and vapors in the soil. The heated air of the house in rising sucks from the soil the gases contained in it, and these permeate the rooms of the dwelling to take part in supplying the respiratory needs of its occupants. The means for this communication between the house space and the ground space are abundant. In the lower rooms there can frequently be demonstrated a strong breeze blowing into the rooms from the space beneath the floor through the cracks between the ends of the floor-boards and the side-wall.

This matter will, perhaps, seem of greater importance when reference is made to those influences that cause pollution of the soil beneath a house. In the meanwhile, it is an interesting observation, made by an English hygienist, that, under the best conditions, every house in a large city is enveloped in an atmosphere charged with impurities that are deposited on the neighboring surfaces that can retain or absorb them. In other words, an inhabited house, like a living body, is continually exhaling noxious matters. Evidently the way to avoid breathing this foul and disease-breeding ground-air is to coat the ground and walls under the house with cement, or better, asphalt, impervious to air and moisture, and then to thoroughly ventilate all the space under the ground floor. In the houses noted in our records, there was seldom a cellar under the whole of the house, and the cellar, when present, rarely afforded efficient ventilation for the remaining ground-space.

The *data* are as follows:

In the scarlet fever houses there was no cellar in 18 per cent.; the cellar floor was of dirt in 69 per cent., of cement in 16 per cent., of board or brick in 14 per cent. The cellar was dry in 20 per cent., and damp in 79 per cent. There was no ventilation under the house in 43 per cent.; it was poor in 39 per cent., and good in 17 per cent. In the diphtheria houses the condition was worse, namely: No cellar in 23 per cent.; dirt floor in 68 per cent., cement in 17 per cent., board or brick in 14 per cent.; the cellar was dry in 20 per cent., and damp in 79 per cent.; there was no ventilation under the house in 67 per cent., it was poor in 16 per cent., and good in 16 per cent. In most cases the nature of the surroundings aroused strong suspicions that the dampness was the result of soakage from leaking cesspools or from slops thrown upon the surface; it is common to find a fungous growth upon the cellar walls.

It is manifestly a matter of the very first sanitary importance that the sewage and garbage should be completely removed from the neighborhood of all dwellings. In large communities there seems to be but one efficient mode of disposal of fecal matter and slops, and that is by means of a well-con-

structed system of sewers. The fate of the garbage is largely determined by the habits of the members of the community. It seems impossible to educate the mass of the people to consuming it by fire. Until a short time ago, Denver was very inadequately sewered; but there is excellent prospect that, within a year, only a small portion of the city will lack this means of filth-removal. Even in the sewered parts of the city the proportion of houses connected with the sewer amounted in June, 1891, to considerably less than 25 per cent. For the most part, the house-wastes, when not thrown upon the ground, were conducted to cesspools and privy-vaults, which almost invariably leaked, saturating the ground with the best of germ-propagating food.

As regards sewer-connection, our figures show that, of the scarlet fever houses, 36 per cent. were so connected and 63 per cent. not connected; 33 per cent. had neither cesspools nor sewer-connection; while 30 per cent. had cesspools, of which 91 per cent. leaked. In the diphtheria houses, only 22 per cent. were sewer-connected; 49 per cent. had neither cesspools nor sewer-connection; 28 per cent. had cesspools, of which 94 per cent. leaked. These figures, at least, indicate that there are no virtues in an unsewered district, as such, that protect that district from disease.

It was the first inclination to believe that these data definitely proved the superior sanitary advantages of sewer-connection, but, on comparing with the total number of houses in the thirty-first sewer district the number of those that had been connected with the sewer up to June 1, 1891, it was found that only a little more than 24 per cent. of the houses were so connected; on the other hand, of the houses in the thirty-first district examined on account of the presence of infectious disease, it was found that more than 41 per cent. were connected with the sewer. This result impresses upon us an important corollary to the general sanitary law of waste-removal, and that is, that though efficient sewerage is, for a large community, the best means yet discovered for the disposal of slops and fecal matter, there may be such radical defects in the work of the drain-layer and plumber that the sewer becomes an actual menace to health.

There are two principal ways in which sewer-connection may become a positive danger. The plumbing in a house, unless constructed in a most conscientious manner by workmen possessing a considerable amount of trained knowledge, is almost sure to result in a set of apparatus easily made foul and difficult to clean, and in traps that readily lose their seal and admit into the rooms the gases from the sewer. We hear a great deal about "sewer gas," and it is a most convenient cudgel to arouse the apprehension of householders whose premises need sanitary remodelling; for people are to be convinced by things visible, palpable, and odoriferous, if not by the logic of scientific facts. Yet sewer-gas is, chemically, not a very poisonous agency, and it may be doubted that it often produces serious evils, except when it rises in bubbles from fermenting or agitated sewage and carries with it a spray of moisture containing pathogenic microorganisms. No one can predict when such a catastrophe may arise, and, harmless or not, none but an imbecile would willingly permit the admixture of sewer-gas with the air to be breathed by his household. Probably a more serious defect than insufficient plumbing within the house arises from the leaky condition of the soil-pipes on or under the surface of the ground beneath the house. Nearly all the soil-pipes in Denver that were laid previously to two or three years ago, were constructed of short pieces of tile, cemented together. Sooner or later, such tile-drains begin to leak at their joints, gradually saturating the soil beneath the house with fecal matter that, as already pointed out, is one of the best of all media for the preservation, if not the propagation, of pathogenic organisms, and is the substance that, above all others, is likely to contain them.

Moreover, the soil-pipe often runs very near, or even within, the fresh-air duct of the furnace, through which, in winter, air is supplied to the house for the purposes of warmth and ventilation.

It may be noted, in passing, that a serious menace to the health of many families resides in the structure and position of the channel conveying air to the furnace. This duct often opens on the surface of the ground in such a manner as to become a receptacle for filth, and it is almost invariably so leaky as to permit the free entrance of ground-air from beneath the floor.

As regards the plumbing and drains in and under the houses of Denver, suffice it to say, that not only do they too often exhibit the most glaring sanitary defects, but it is only at the price of eternal vigilance on the part of householders and sanitary officers that we can hope to avoid the repetition and perpetuation of this defective work and workmanship.

This statistical review will be brought to a close by a consideration of the source of the water-supply in the infected premises. Only one fact with regard to the water-supply seems especially significant. Seventeen per cent. of the houses infected with scarlet fever, and not less than 30 per cent. of those infected with diphtheria, depend on wells for their washing and drinking water.

These wells are never driven below bed-rock, and must receive all manner of surface-drainage. When

the sewers were laid in West Denver, it was found that the water in the wells of that section fell to the level of the sewer line. This, taken in connection with the fact that chemic analysis almost invariably shows the presence in well-water of a much higher percentage of chlorides and nitrites, the common result of fecal contamination, than does the city water, sustains the conclusion that well-water is, for the most part, dangerously polluted with the filth of surface-soil.

The foregoing sketch is but an incomplete and preliminary representation of the more salient facts in the sanitary problem of Denver. It nevertheless seems that certain conclusions of importance can safely be drawn from the data recorded. It appears, in the first place, that there is an important distinction between the habits, so to speak, of diphtheria and scarlet fever, in that the former is more fixed and the latter more nomadic in its distribution.

The more fatal disease, diphtheria, clings to certain houses and neighborhoods in which definite investigation has shown the surroundings to include the sum of those conditions that common experience has denominated unsanitary. The worse the sanitary state of the locality (not necessarily the worst to superficial observation) the more numerous are the cases, not only of diphtheria, but of typhoid fever and other infectious diseases.

Notwithstanding the conclusions of a recent writer in THE MEDICAL NEWS,[1] we are justified in still holding to the belief that diphtheria is essentially a filth-disease; its germ abides in, and is nourished by, polluted soil; and with it we have usually found associated the evidences of other infectious diseases.

The milder disease, scarlet fever, appears to be more dependent on actual contact between person and person for its transmission. Though most cases of scarlet fever, like those of diphtheria, occur in localities in bad sanitary condition, a large proportion is distributed in neighborhoods and in houses of which the sanitary condition is, at least, better than the average.

In some years there seems to be a close relation between the number of cases of scarlet fever reported and the duration of the school-term. With regard to diphtheria, however, such an association is by no means so apparent.

In the second place, if we but admit the truth of the sanitary dictum that "filth breeds disease," it can hardly be disputed that the facts recorded in the foregoing statements show abundant explanation of the existence and propagation of infectious disease in Denver.

[1] "Are Diphtheria and Typhoid Fever Filth-Diseases?" Chapin, THE MEDICAL NEWS, 1892, p. 312.

A NATIONAL SYSTEM OF SANATORIA—A PLEA AND A PROPHECY.

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IT ought to be a remarkable assertion that up to this time there is in this country not a single health-institution, invalid-retreat, or sanatorium, founded, constructed, and conducted in full and perfect accord with recent advances in medical and sanitary science; yet it is extremely doubtful whether any intelligent apologist will either contradict or seriously attempt to refute the assertion. Hence, it is impossible to avoid the conviction that, in the light of the fairly revolutionary biologic and etiologic discoveries and demonstrations of the past ten or fifteen years, we shall soon be compelled to radically revise or perhaps totally discard the present system, if system it may be called, of locating, building, and managing sanatoria.

With few exceptions, existing institutions of this kind were built and are conducted on theories and practices, or possibly only on traditions that, with comparatively few and very conservative modifications, have prevailed for generations past. Many of them were built and equipped, and are operated solely from the sordid motive of money-making. Some of them are merely the pronounced and arbitrary exponents of the medical fads and hobbies of physicians who rely on some one special or exclusive treatment, or who expatiate enthusiastically concerning the panacea of climatic influences, or the miraculous virtues of some gushing spring of earth-heated or mineral-tainted water. Others are simply invalid-hostelries, palatially and ostentatiously equipped and appointed structures, in which the fashionably sick, lame and lazy are periodically massed and charged unconscionable rates for the privilege of inhaling each other's breath, exchanging social scandals, or condoling with each other over real or hypochondriacal ailments. Millions are annually spent—for the most part squandered—by the invalid and semi-invalid classes at these resorts, either fashionable or advertisement-famous, the benefits realized being principally from the travel, the change of diet and surroundings, and the consequent mental diversion incurred.

Primarily, even as to location, it is evident that many, perhaps a majority of existing health-institutions were founded at sites selected more on account of the immediate proximity of some traditionally famous "mineral" springs, or with a view to fashionable accessibility and likelihood of popular patronage, than on account of sanatory, climatic, or hygienic considerations. In the matter of their construction and arrangement, the evident aim has been to secure the largest accommodating capacity possible for the amount of capital involved.

True, there is a margin of excuse in the fact that many, in fact nearly all, were built before sanitary science had reached its present status; but there are too many instances in which there has been a palpable disregard of known sanitary laws. In the general plans and arrangement, business expediency has been carefully considered, and commercial necessities have been made to cover a multitude of unsanitary sins. In consequence they are really *hôtels des invalides*, but in no accurate or modern sense are they sanatoria. Their managers are selected, not according to their competency as physicians and sanitarians, but for their natural aptness and tact as landlords. Considering existing standards and the incongruous conditions and demands to which they are obliged to cater, it is surprising to see how relatively well some of them acquit themselves. When they are proprietors they are expected, above all other considerations, to make money for themselves; and, when merely salaried employés, for a mercenary capitalist or some heartless as well as thoughtless stockholders. They must, therefore, trim their sails and shape their courses to meet the whims and vagaries of a fickle and unintelligent popular fashion. It is quite time that this fashion, which is almost never based on real faith or confidence, rarely even on tradition, but usually on some contagious whim, should be intelligently coached and directed, instead of being systematically and annually flattered and fostered.

The divergence of these institutions from hygienic and scientific ideals is more glaringly apparent in the matter of construction than in any other particular. With so few exceptions that they are scarcely worth mention, they are all either hostelries or hospitals. As such they are fairly suited to the temporary entertainment of either guests or patients, but they are not at all adapted for the proper or prolonged treatment of chronic invalids. Hotels and hospitals are both very necessary; but as a hotel is never a legitimate or permanent home, so a hospital can never be made a proper or efficient sanatorium.

If it were necessary to adduce evidence to confirm this assumption, it would suffice to cite the indisputable fact that all recent scientific and hygienic demonstrations unmistakably point in the direction of *segregation* as opposed to *congregation*, in the matter of housing and treating chronic invalids. In the present state of society, hotels and hospitals are indispensable; but it matters not how palatial or well-appointed they may be, both are merely sanitary compromises, since in them the plan of isolating or dissociating patients is not and cannot be made possible.

In the matter of treating chronic invalids, it is now admitted by a growing consensus of authoritative opinion that there are no specifics, that old-time dosing has at best but a very limited province, and that a skilful and scientific adjustment of all salutary natural agencies does most, and often all that is done, or that can be done, toward the relief and betterment of the patient. It must be understood that the term "natural agencies" is very comprehensive, including at once all those forces, influences, and resources of nature now so freely and generally invoked by the modern physician and sanitarian; climate, altitude, nutrition, asepsis, general hygiene, hydrotherapy, electricity, pure air, sunshine, exercise, massage, the moral and social environment, etc.—an almost interminable list.

How many of the existing "health" institutions are either situated or constructed so that the essential details of any such comprehensive or in fact of any rational system of treatment can be even approximately carried into effect? Taking into consideration the system or rather un-system under which they were organized, and the absence, at the time they were built, of some of our present sanitary light, it must be admitted that some existing institutions are doing decidedly creditable work; but it is evident that, hampered by that system and primary drawback, they can never hope to approximate an ideal standard of attainment. And while it is freely admitted that there are painstaking and conscientious workers in this field, none better than they realize their utter but inevitable limitations.

Another very serious drawback to the existing state of things is that individualized institutions, like any other independent organizations, are naturally, and must always remain, competitors. As a consequence they are in a commercial, and altogether too often in a professional, sense antagonistic. Each is duly bound to herald its own claims and asserted advantages as wholly peculiar to itself, and decidedly superior to any found elsewhere. In this imperfect world this spirit inevitably leads to detraction and misrepresentation, fosters professional jealousies, and results in frequent instances in patients being induced to seek climates and locations manifestly unsuited to their individual conditions or circumstances.

Still another considerable objection to the existing system is its relative costliness. "Well-appointed" hostelries necessarily entail heavy expense in the matter of show structures and extravagantly luxurious furnishings and equipments. It follows that so long as so-called sanatoria are virtually patterned after merely high-toned hotels, well adapted to the entertainment of miscellaneous guests, including semi-invalids, social adventurers and malcontents, periodic travellers, and that annually increasing class of the discontented victims of mere *ennui*, whose time and, possibly, money both hang heavily on their hands; in short, until the

newer demands in the matter of construction and arrangement of these institutions shall have been carefully considered and practically met, this item of comparatively needless expense is implied and cannot be avoided.

That existing "health-resorts" are liberally patronized, and that many of them are annually compelled to enlarge their facilities, by no means proves that they are in any sense model institutions, not even that they are passably unobjectionable, hygienically speaking, as popular resorts. Their success is more a matter of advertising tact and fashionable preference than from any valid claims for sanatory merit. This is sufficiently evident from the quite too frequent reports of infectious and easily preventable epidemics that somewhat more than rarely occur at these places. At the same time, the immense patronage annually and eagerly accorded to them, abundantly proves the existence of a persistent and steadily growing demand for properly planned, equipped and conducted sanatoria.

How can the requirements of modern science be met? The first and most important step is unquestionably in the direction of the segregation or semi-isolation of sick people. No set arguments are needed to substantiate this position; every microscopic revelation in the biologic field for the last ten years has reasserted it. The laws of antisepsis, all the discoveries pertaining to the processes of infection, contagion and disinfection corroborate it; the necessity for it has become pronounced and unmistakable. To accomplish it, in any thoroughly practical and effective sense, implies the cottage and dormitory plan of building, both of hospitals and sanatoria. Happily, the sanitary arguments are not the only ones to be adduced in favor of this plan. By this plan the necessity for massive, palatial, excessively ornate—and, therefore, unnecessarily costly—structures is at once obviated. It calls for a central rendezvous and supply-house, which may be very simple in design and yet architecturally tasteful, surrounded at sanitarially safe distances by groups of detached and preferably *portable* cottages, varying in design and finish from the simplest rusticity to the most ornate, to suit the tastes and purses of every grade of patrons; but which, above all else, must be perfectly adapted to the uses and purposes for which they are designed.

It is assumed that the requirements of economy as to original outlay are decidedly in favor of the cottage plan of building; but even if the reverse were shown to be the case, if rational deductions from well-demonstrated and now generally admitted data are to receive practical recognition at the hands of sanitarians and the general profession, it is quite evident that in the light of recently demonstrated sanitary science, the massing of invalids in large single edifices can no longer be tolerated. Furthermore, measured by the question of practical results, the problem of ultimate economy can have but one solution, and that in favor of the cottage plan, no matter what might be indicated by the figures of the original outlay.

Two vitally important questions remain to be considered: First, how to effectually eliminate the disastrous element of undignified and unscrupulous competition. Second, how to formulate a practical business basis on which to organize any implied or proposed "new departure."

As a possible and apparently feasible solution of the first I suggest the organization of *A National System* (or Chain) *of Sanatoria*, the same to be planned and conducted under one coördinate and coöperative management, if the term "coöperative" may be used in its higher sense and without prejudice on account of its much abuse, and if medical politics and professional jealousies can be kept in abeyance sufficiently for the purpose. Can it be that in the latter years of the nineteenth century these are impossible conditions? On the contrary, is it not true that, in all matters pertaining to sanitation and medical practice, whatever is scientifically shown to be necessary can be made practically feasible. From a commercial point of view there need be no hesitation, and certainly the profession must at all times hold itself in readiness to assume any attitude or to make any advance that science may demonstrate to be at once both logical and necessary, as well as ultimately inevitable.

It is not the design of this paper to suggest details, but the plan itself, in outline, palpably involves the location and organization of a considerable number of separate yet associate institutions at the most desirable sites to be found throughout the country; the selection of a central medical board, and of a local auxiliary board in every city and town of any size, these boards to be composed of progressive and representative physicians, who would enter into the spirit of the movement with some degree of professional enthusiasm, and who in their respective localities would act as referees, advisors, and examiners for the system. Such a body of medical experts as could be selected to compose these boards would unquestionably command the respect and unhesitant confidence of the entire community. Their examinations and advice, unbiassed by narrow prejudices or by personal interests and preferences, would be universally accepted, and would serve to prevent the sending of applicants to climates and locations manifestly unsuited to their individual conditions. This latter item of itself would be a great advance over the present practice. In the composition of these boards, if only men of broad culture, liberal

views and genuine professional honor be allowed to acquire influence in connection with the management, and if medico-political cliques can be rigidly avoided, there need be no difficulty in securing the requisite degree of professional harmony.

It can hardly be doubted that such a system of sanatoria, intelligently organized on thorough business principles and directed by good and earnest men—of whom there is no dearth in the profession—would be accorded a patronage unprecedented in the history of medicine, or rather in the history of health-seeking. The country is full of invalids, and doubtless always will be. At present not one in ten of those who ought to be in some well-equipped institution, specially adapted to their conditions, can be persuaded to present himself for treatment, for the very cogent reason that, considering the cost, commensurate results are not sufficiently promising, or because the various and contradictory advice vouchsafed by different authorities is so bewildering that he comes to lose faith in all climates, localities and institutions. On the other hand, under the proposed system, each locality would have its board of three, five or more skilled physicians, before whom applicants could go with every assurance that in giving advice their cases would be fully investigated and their future interests carefully conserved.

Again, under such a systematic and eminently rational arrangement many of those absolutely hopeless cases, now either selfishly or injudiciously sent away from home and friends only to quickly decline and die, would be frankly and considerately advised to spare themselves the risk, fatigue and expense of a worse than fruitless journey. While this course should unquestionably be universally followed for the reason that it is infinitely more humane to all such patients, it would also prove far better for the reputations of sanatory institutions. On the other hand, hundreds of cases unquestionably amenable to systematic treatment at a well-regulated sanatorium, but which, for reasons indicated, do not now seek these institutions, under such advice as has been outlined would eagerly and early apply for care and treatment. Thus, while the patronage would be constantly and substantially increased, its general character would at the same time be materially improved by the exclusion of patients in the last or hopeless stages, as also those afflicted with incurable diseases, cases whose presence in any, except it be a special institution, results in no good to them, while it acts as a serious depressant and menace to others.

Theoretically the foregoing suggestions seem plausible. Can they be made to materialize?

It has passed into a proverb that doctors are neither capitalists nor good business managers; but, as with all such sweeping rules, there must be plenty of exceptions. Capitalists are not presumed to appreciate all the sanitary and scientific arguments adduced; they demand commercial proofs. But if barely one per cent. of the active practitioners of the United States would combine, each contributing his influence and a very modest amount of spare capital, such a promising nucleus would be secured that plenty of capital would soon be found seeking the investment.

If the proposition seems chimerical on account of its implied financial magnitude, what shall we say of the numerous quack medicine schemes that are so readily floated in the stock market, each on the basis of several millions of capital stock?

Gentlemen of the profession, are you ready for the question?

A CRITICAL STUDY OF THE MAIN DEFECTS OF JAVAL'S OPHTHALMOMETER.

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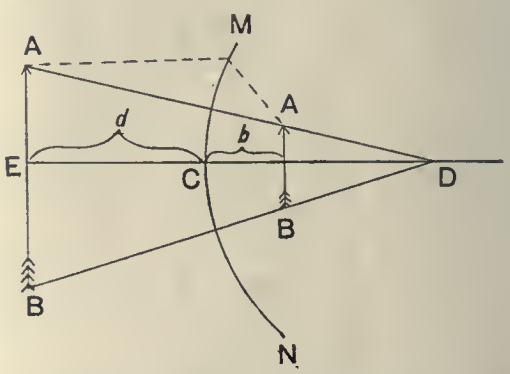
JAVAL'S ophthalmometer was first brought before the profession about a decade ago with the claim that it enabled the ophthalmologist to determine corneal astigmatism objectively to within a quarter of a diopter. This claim seems now to be conceded by many members of the profession; but I think it will be clear after the following exposition that such a claim is *untenable*, especially according to Javal's own mathematic method, and that it is only by accident (*sit venia verbo!*) that this claim has been partially substantiated in practice.

FIG. 1.



To understand this seemingly paradoxic statement I must ask my readers to glance at a few mathematic formulæ. First, however, let us recall the method of finding the radius of curvature of a convex mirror, such as the anterior part of the cornea is.

If A B (Fig. 1) be the object, at a right angle to the optic axis E D; if M N be the surface of the convex mirror, the center of which lies at D, and

if E C $= d$ and the distance of the image A′ B′ from M N $= b$, then we have

$$(I)\ \frac{1}{d} - \frac{1}{b} = -\frac{2}{r}\ (\text{if } r = \text{C D}),$$

and further,

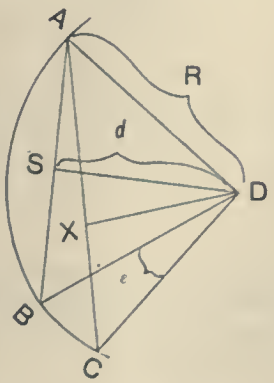
$$(II)\ \frac{\text{A B}}{\text{A}'\text{B}'} = \frac{d+r}{r-b} = \frac{\text{Size of object}}{\text{Size of image}} = \frac{\text{O}}{\text{I}}.$$

If we express r in equation (II) in terms of d and b of (I), we get $\frac{\text{O}}{\text{I}} = \frac{d}{b}$, or expressing here b in terms of d and r by equation (I) we have $\frac{\text{O}}{\text{I}} = \frac{2d+r}{r}$ (III).

Now, here lies the *first inaccuracy of Javal*, for he makes $\frac{\text{O}}{\text{I}} = \frac{2d}{r}$, which is right only if the object lies so far from the mirror that its image falls at the focus of the mirror, which is at $\frac{r}{2}$. Really, Helmholtz did use the formula $\frac{\text{O}}{\text{I}} = \frac{2\,d}{r}$ because he placed his object at 2000 mm. from the cornea, while Javal makes $d =$ only 280 mm. To prove the inaccuracy we have only to remember that Javal's instrument is so constructed that the image, I, always $= 3$ mm. as soon as the two reflectors have been moved so that their two inner images touch. Therefore, $\frac{\text{O}}{\text{I}} = \frac{2\,d}{r}$ becomes $\frac{\text{O}}{3} = \frac{560}{7.8}$, as r, the average radius of curvature of the cornea, equals 7.8 mm. Then O $= 216$, while by using $\frac{\text{O}}{\text{I}} = \frac{2\,d+r}{r}$ we get O $=$ 219 mm., which is a difference of about 1 5 per cent.

Another inaccuracy of Javal's instrument arises from the fact that his reflectors slide on an arc, for

FIG. 2.



this sliding changes d continually, as will be easily seen by the following diagram (Fig. 2). Here A B C is the arc on which the reflectors are moved. Suppose, now, that the one slider has to be moved from B to C to get contact of their images, then d will change also. It will become R cos $\left(\alpha + \frac{\varepsilon}{2}\right)$, if R $=$ A D, or the distance of the arc from the cornea, and α the primary angle A D S, and ε the angle between B D and C D. Javal, however, makes $d =$ R cos α a constant quantity all through his calculation. One may object to this criticism as being very trivial, and, indeed, numerically it does not amount to much; but it must be mentioned here, because it can be so easily remedied that it is astonishing that it escaped Javal's mind.

The *main error of Javal*, however, lies in the following: In his own description of his instrument he states that f, the focal distance of the cornea, $= \frac{r}{n-1}$, if r is the radius of the cornea and n the index of refraction of the cornea and aqueous humor. Now, as we want to find the refractive power of the cornea for rays coming from the outer world, it is undoubtedly true that f can only $= \frac{r\,n}{n-1}$, for this alone tells us how far back from the anterior surface of the cornea parallel rays from distant objects would meet. Or, if we express it in diopters, then we must say, the refractive power of the cornea $\text{D} = \frac{1000}{f} = \frac{1000\,(n-1)}{r\,n}$. *This* is the right formula, and *not Javal's*, whose expression for D is $\text{D} = \frac{1000\,(n-1)}{r}$. The following table will illustrate the difference:

43.1 D of Javal ought to be	32.3 D for $r =$	7.8 mm.
40.5 D " " "	30.3 D for $r =$	8.3 mm.
37.1 D " " "	27.7 D for $r =$	8.8 mm.
30 D " " "	22 5 D for $r =$	11.2 mm., etc.

Now, it may be said that the question is not so much as to the absolute refractive power of the cornea, but the difference between those powers in the different meridians, or the amount of astigmatism. But it must be replied that the amount of astigmatism is affected also, as is shown by the following examples:

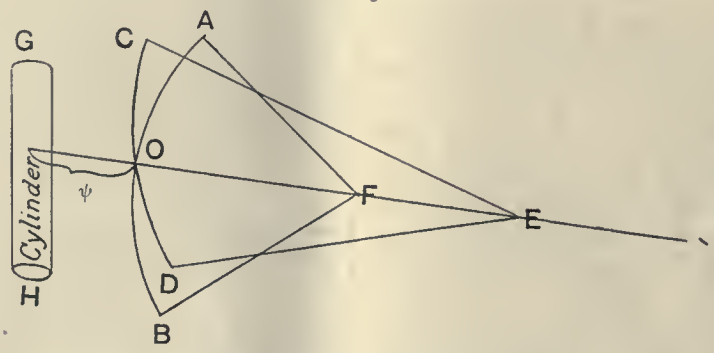
6 D astig. of Javal only	$= 4.6$ D	astig. of cornea.
3.4 D " " "	$= 2.6$ D	" "
2.6 D " " "	$= 2$ D	" "
1 D " " "	$= 0\,74$ D	" "

In short, all the values of Javal for the amount of refractive power of the cornea and the amount of corneal astigmatism are n times too large, if $n =$ index of refraction $= 1.337$.

"But how is that?" the impatient reader will ask. "Does not clinical experience show that Javal's instrument does often give very good results?" I answer, Yes, often, but not always; and must add that this result is not obtained by the right calculation, but results very strangely from

accidental causes, as follows: It is well known that the value of a lens changes with regard to its optic effect on the eye according to the position the lens occupies. Now, if Javal were right in his calculation, so that his instrument showed the real astigmatism of the cornea, then quite a different glass would have to be used at 15 mm. from the cornea, the anterior focal point of the eye, where our lenses ought to be placed. Still we use Javal's numbers even at that distance from the eye, which shows plainly that his calculations for the integral corneal astigmatism must be wrong. To make this more clear let us look at the following figure (Fig. 3): Let A B

FIG. 3.



be the vertical and C D the horizontal meridians of the cornea, which are of differing curvatures, so that F is the focus of the rays through the vertical and E the focus of those through the horizontal meridian. If the refractive power of the cornea in the horizontal meridian = D diopters, and that of the vertical = D′ diopters, if D′ is supposed to be greater than D, what lens have we to place at the anterior focal point of the eye at the distance of ϕ mm. from the cornea, or, more correctly, from the first principal point of the eye, in order to make the combined refractive power of a cylindrical lens and the cornea in the horizontal meridian equal to that same power in the vertical meridian? To simplify the problem, however, let us put the cylinder, not at ϕ, but at the *anterior* focal point of the *cornea*, which is $= \frac{r}{n-1} = \frac{7.8}{0.437} = 23$ mm., while ϕ would be about 15 mm. from the cornea. Now, it is well known that if a lens is placed at the anterior focal point of an optic system, the second principal point, and with it the second principal focus, of the combined system is obtained by moving these points of the given system in the same direction through the same definite extent. In our example the second principal point lies, together with the first principal point, at the apex of the cornea, and it is moved through $\frac{\psi\psi'}{f}$ mm. away from the cornea, if ψ and ψ' are the anterior and posterior foci of the cornea and f the focal distance of lens or cylinder. As we want the rays through C D also to come to a focus at F, we have to choose our lens so that

$$F E = \frac{\psi\psi'}{f} = \frac{\psi \times 1000}{fD}, \text{ because } D = \frac{1000}{\psi'}.$$

This we may write

$F E = \frac{\psi D_L}{D}$, if we mean by $D_L = \frac{1000}{f}$, the refractive power of the cylinder in that meridian. Further, it is clear that F E, the focal interval, $= \frac{1000}{D} - \frac{1000}{D'}$, as $O E = \frac{1000}{D}$ and $O F = \frac{1000}{D'}$. Therefore, we have now $\frac{1000}{D} - \frac{1000}{D'} = \frac{\psi D_L}{D} = \frac{1000 (D' - D)}{D D'}$

And as $\psi = \frac{r}{n-1}$ and $D = \frac{1000 (n-1)}{rn}$, we can write for $\frac{\psi}{D}$ the value $\frac{1000}{D^2 n}$, so that we have

$$\frac{1000 (D' - D)}{D D'} = \frac{1000 D_L}{n D^2}, \text{ or } \frac{D' - D}{D'} = \frac{D_L}{n D}.$$

Therefore, $D_L = \frac{n D (D' - D)}{D'}$, if $D' - D =$ the amount of real corneal astigmatism $= d$. The value of our lens, therefore, which, at the anterior focal point of the cornea = 23 mm., corrects the corneal astigmatism, is $D_L = \frac{n D}{D'} d = \frac{n (D' - d)}{D'} d$. This we may write $D_L = \frac{n D}{n D'} n d$; and as we know from former considerations that the real values of astigmatism and corneal diopters have to be multiplied by n to get those of Javal, and if the respective values of Javal are called Δ, Δ', and δ, we have $D_L = \frac{\Delta}{\Delta'} \delta = \frac{\Delta' - \delta}{\Delta'} \delta = \delta \frac{\Delta}{\Delta + \delta}$. Now, usually $\frac{\Delta}{\Delta + \delta}$ is not much different from 1, and so we get approximately $D_L = \delta$, if $\delta =$ Javal's astigmatism. Suppose, for example, that there was a real corneal astigmatism of 3 D, then Javal's instrument would

indicate an astigmatism of 4 Δ, while the real correction at 23 mm. would be a cylinder of 3.6 D. So 1 real D would be 1.337 of Javal = 1.19 at 23 mm. if the meridian of lowest curvature was 37.1 Δ. These values would change a little if the lens were placed at 15 mm. away from the cornea—*e. g.*, 3.6 D at 23 mm. would be 3.7 D at 15 mm. In the higher forms of astigmatism, however, the difference is very considerable; for, suppose that Javal's instrument showed 8 Δ astigmatism, then this would equal 6.5 D at 23 mm. from the eye and 6.8 D at 15 mm. away from the eye, so that between Javal's glass and the true cylinder there would be a difference of about 1.25 D, certainly a very considerable amount. In the same way, Javal's 6 would be equal to a 5 cylinder.

Another inaccuracy must be mentioned still, with reference to the graded reflector, where each step is supposed to indicate one diopter. To get the size of those steps Javal uses the formula $\Delta = \frac{1000\,(n-1)\,O}{2\,d\,I}$ where d is the distance of the object O from the cornea, while the right formula would be

$$D = \frac{1000\,(n-1)\,(O-I)}{2\,d\,n\,I}.$$

Now, Javal makes d *about* 281 mm. in his latest model (it changes continually, as already proved), and $I = 3$ mm.; and as $n = 1.337$ we get

$$\Delta = \frac{337 \times O}{281 \times 6} \text{ and } 1 = \frac{337 \times O}{281 \times 6} = \frac{O}{5},$$

from which it follows that $O = 5$ mm. for each diopter, while from the true formula

$$D = \frac{1000\,(n-1)\,(O-I)}{2\,d\,n\,I}$$

it follows that the object O ought to increase 6.7 mm. for each diopter. But while Javal is right in making the steps of his reflector = 5 mm. each for *his own* diopters, he is wrong in making those reflectors curved, because each step has then less value than 5 mm. as measured in the line of union of the two reflectors.

So far, all the objections raised have nothing to do with the principle of the instrument, but only with the special form given to it by Javal. For it must not be forgotten that the instrument is almost the same as that described by Rochon in the *Journal de Phys.*, vol. liii, in 1801, and that it has a good place in science under the name of Rochon's micrometer. Javal only gave the bi-refracting prism a definite place in the telescope and then made the calculation for the refractive power of the cornea, adding an arc and two reflectors. Now, the calculation and the arc, as well as the two reflectors, are not quite correct, but the error might be easily rectified, and so a more perfect ophthalmometer on Rochon's principle be constructed. But it seems to me that there is a serious defect in the very principle of the instrument, because the bi-refracting quartz-prism is not achromatic, so that the margins of the images are not sharply defined, which makes it impossible to get the accurate contact so necessary for an accurate result.

THE BLENDED TOCCI BROTHERS, OF LOCANA, ITALY.[1]

BY ROBERT P. HARRIS, M.D.,
OF PHILADELPHIA.

[Dr. Harris brought to the notice of the College an enlarged photograph of this remarkable monstrosity, which had been prepared for the Mütter Museum at the desire of its curator, and made the following remarks.]

WE have here a nude representation of what we must regard as the most remarkable duplex monstrosity that the world has seen since the death, three hundred and seventy-four years ago, of their Scotch analogue, which had reached the age of twenty-eight years. This peculiar type of blended twins appears, on an average, twice in a century, as there have been about a dozen in the last six hundred years, and but two in the current century. The most remarkable feature about the Locana twins is that they are living and in good health at the age of fourteen and a half years, and bid fair to reach mature age, because of the perfection and independence of their thoracic and abdominal viscera. In the last six hundred years but two monstrosities of the same type have lived out their first year; and this early mortality we must attribute to a want of internal anatomic symmetry, and particularly to an abnormal construction of the heart and distribution of the bloodvessels in one twin. It is doubtful if united twins are ever equals in mental and physical vigor, and the Tocci Brothers are as nearly alike in health and strength as has been the case in the subjects that have lived the longest.

The photograph before us represents the boys in a standing position, but it will be seen at once that they are mainly sustained in it by the use of their arms, and that this is more markedly the case with the left twin, whose shoulder is forced upward, because of the weak support given by his club-foot and imperfectly developed leg.

These twins were born in Piedmontese Italy, on October 4, 1877, after a labor of eight hours, under a midwife, the head of the right boy, Giovanni, coming first; and he appears to have held that relative position, in a mental sense, ever since. Giacomo's head soon followed, and then came the double thorax, a single abdomen, one pair of legs, and a single placenta. Nothing was said about the cord, except that there was but one; but it was no doubt composed of six vessels—four arteries and two

[1] Read before the College of Physicians of Philadelphia, May 4, 1892.

veins. The twins weighed eight and three-quarters pounds when a month old, and probably a pound less at birth. When three years old, as shown by a photograph, they had narrow shoulders, a corpulent abdomen, and, for their age, large testicles. Giovanni had a long face and a girl-like appearance, but his head-circumference has always been a little the larger of the two.

These xiphodidymi belong to the class that is distinguished by having two heads, four arms, and only two legs. In general outline they resemble, when their legs are together, a letter Y—the heads, shoulders, and chests down to the sixth ribs making the V, and the abdomen and legs the I, or stem. Their present weight is ninety-five pounds, which is about that of a healthy, robust boy of their age. Their arms having much more exercise than their legs, are larger, in proportion to their age, than the latter; and the glutei muscles of Giacomo are badly developed, because of his talipes equino-varus, and consequent inability to develop them by exercise. Single boys of fourteen, as a rule, have much better developed legs than arms, which led to the expression in war times: "Better fitted for running away than handling a musket." But the Tocci boys are the reverse of this in strength.

If we had a back view of the monstrosity, it would show their two inner arms crossing each other over to their outer shoulders, in the position in which they usually hold them; two converging spinal sulci extending down to two sacra; two outer nates as in a single subject, and two little rudimentary nates, with a cleft between them, located over the intrasacral symphysis. They have no rudimentary nodule to represent an attempt at the formation of a third leg, as has been found in some analogues.

As they look at you, the two boys are quite different in facial contour, and Giovanni is generally credited with having the better mind; but their faces in profile bear a closer resemblance. They have fair skins, and at times a rosy color, and thick, brown hair. Their bodies are short, and they are below the medium height for their years. Their acial expression is not a happy one, when in repose, and reminded me of what I have noticed in boys having deformed feet—a shame-faced look.

In measure of health the twins compare well with normal children of their own sex, having had but little sickness since birth, and not having lost a day therefrom since they commenced to exhibit themselves in the United States, six months ago.

Giovanni is the stronger and more erect of the two, has the better ear for music, learns a foreign language the more readily, and is generally the more intelligent. He has a natural talent for drawing, and is devoted to making pictures of our domestic animals, such as the horse, cow, etc., and of some of the savage quadrupeds, as of the lion and tiger. Giacomo is the critic in art, although drawing but little, and his taste is for caricatures. The brothers converse a great deal together. They are both right-handed, although one might have supposed that Giacomo would have naturally preferred his free arm, the left.

The boys have each two lungs, the outer being the larger, and are forced to breathe largely by their diaphragms. They have separate and distinct hearts, located in the left chest-cavity respectively, and these hearts are believed to be normal in structure. Giovanni feels his heart beating on the left side—and if either boy had an abnormal cardiac structure, he should be the one, yet his color and health indicate the contrary. The cardiac beats are not synchronous, and one heart generally pulsates a little more quickly than the other.

They have two stomachs, and that of Giovanni is said to be reversed, the greater curvature being to the right, as was the case in Rita, of the Sassari girls of 1829. I was not permitted to verify this, because of the opposition of the father. These two stomachs are as independent functionally as if they occupied two different abdomens. Recently, when travelling by railroad, one of the boys became very pale, and directly vomited the contents of his stomach,[1] while the other was so entirely free from nausea that he laughed at his brother for his mishap. One brother may wake up hungry, drink a cup of coffee, and eat something, while the other remains asleep. The two stomachs do not appear to be influenced in the least by being in contact, but only by their respec tive pneumogastric nerves.

There are evidently two sets of intestines—large and small. One boy can have a desire to defecate when the other has not; and this is particularly the case when one has diarrhea, in which event only he has a discharge, while the other is passive. There must therefore be two colons, as were found on autopsy in the Padua boys of 1691. They have probably a common rectum, as had also the Padua analogue; but it is possible that this part of the bowel may be bifid, which would be an interesting feature to determine by touch or speculum. The twins, from habit and convenience, defecate almost always at the same time.

They have two bladders and one urethra, as had also the Padua boys, although they usually urinate together. As their tastes for food and desire for drink are not the same, one boy may be awakened from his sleep in the morning by a distended bladder and empty it without waking up the other, in whom the kidneys have been less active.

My catechetic examinations made last month

[1] This was repeated by Giacomo in public on April 23, 1892, at the Dime Museum, Philadelphia.

confirm the opinions respecting the anatomy of the twins that were formed after auscultation, percussion, and a knowledge of their habits, by Drs. Fubini and Mosso, of Turin, in their second month, and by Drs. Colrat and Rebatel, of Lyons, in their thirteenth. The conjectural belief that they might have two colons has been changed into one of knowledge, as shown by their independence in defecation. In the event of an autopsy, these colons will no doubt be found of small caliber, and quite abnormal as to length and direction. We are warranted in this belief by discoveries that have already been made in the examination of dead analogues. Even the single colon of a double monster is quite abnormal.

The boys are quite differently affected by changes of temperature. Giovanni requires less underwear than his brother, and will perspire freely on a hot day, while Giacomo has a dry skin. Either brother may be seized with an attack of coryza, as the effect of a direct wind-draught, when the other entirely escapes. They sleep upon the back—or, more correctly, each is in a dorso-lateral position, and places the side or back of his head upon the pillow. They usually sleep eight or nine hours continuously. For a change of position they sometimes turn over upon their abdomen for a short time, but never sleep in this form of decubitus.

A prick with a pin in the median line of union is felt by both brothers, but the sensation is lost to one twin in passing to either side. The penis is said to have a sensation common to each, and the scrotum has a partial one beyond the median line. It is claimed that one twin feels a little when his brother's testicle is touched, which I believe to be an error, the sense being in the skin only, as the testicles are supplied with nerves through the inguinal canal. The penis and testicles are in an undeveloped state, being small for their age. The penis becomes erect, but the boys have no knowledge of its sexual function.

The two legs are entirely independent, and each belongs to, and is controlled by, the boy whose head is on the same side. One boy does not feel a touch upon the other boy's leg, and has no power, by his will, to give it the least motion. It is possible that the twins might balance themselves so as to stand, as their Scotch analogue is said to have done, if the leg and foot of Giacomo were as well formed as those of Giovanni, and had the same degree of strength that the latter appear to have.

Whether the boys have two separate livers, or a double one with two gall-bladders, has not yet been ascertained, for want of permission to make the required examination. Having two bladders, they may have two pairs of vesiculæ seminales, but are more likely to have one to each bladder, with one vas deferens and one ejaculatory duct, as this would be in correspondence with the existence of one testicle to the owner of each bladder, and one urethra for the exit of the ducts. I find no reference to the seminal vesicles in any reports of autopsies made in male analogues.

With regard to the other viscera, we can only form an inferential opinion, as follows: The spleens are small, and located right and left to correspond with the positions of the stomachs. The pancreases have their heads facing each other, to correspond with the curve of each duodenum. The kidneys are in two pairs, the outer being large and the inner being small, or, perhaps, rudimentary. It is rare to find no trace of the two inner kidneys when the spinal columns are well separated so as to give space for them.

I see no reason why these Tocci boys may not live a number of years yet. Giovanni is the stronger, mentally and physically, but the difference is not marked, and no special element of weakness likely to shorten life appears to have been discovered in Giacomo. They have both learned a certain measure of French and German, and can both sing, Giovanni having the higher-pitched voice. One of the Scotch twins already mentioned as having reached the age of twenty-eight is recorded as having been quite stupid when compared to his brother. We have no such difference to record here.

THE VALUE OF MILK-LABORATORIES FOR THE ADVANCEMENT OF OUR KNOWLEDGE OF ARTIFICIAL FEEDING.[1]

BY T. M. ROTCH, M.D.,
OF BOSTON,
ASSISTANT PROFESSOR OF DISEASES OF CHILDREN, HARVARD UNIVERSITY; VISITING PHYSICIAN TO THE BOSTON CITY HOSPITAL, TO THE CHILDREN'S HOSPITAL, AND TO THE INFANTS' HOSPITAL.

Two important factors are demanded by physicians of the present day in solving the problem of rational medicine: First, a means of saving time; second, exact methods of work.

I have long felt that the artificial feeding of infants should be reduced to a more exact system, and that in this way an endeavor should be made to rescue this important branch of pediatrics from the pretensions of proprietary foods and the hands of ignorant nurses. With this purpose in view I have established a laboratory in which the materials used are clean, sterile, and exact in their percentages, and are combined in any proportion that the physician may wish to prescribe. Laboratories of this kind should be established everywhere, and physicians should write prescriptions for their infant patient's food and put them in the hands of the milk-modifier in his laboratory, just as they

[1] Abstract of a paper read before the American Pediatric Society, May 4, 1892.

write for combinations of drugs in disease, and entrust them to the pharmacist in his drug-shop. As the result of clinical experience in infant-feeding I have reached the conclusion that slight changes in the percentages of the three elements of milk, of which we have most accurate knowledge, namely the fat, sugar, and albuminoids, have an important bearing upon the management of the digestion and nutrition of infants.

In analyses of milk from seven women the fat, sugar, and albuminoids varied to a marked degree, and yet the infants all digested well and throve on their individual percentages, while what agreed with one produced serious symptoms in another. It seems, therefore, that so far as milk is counted upon as a food, it should be understood to be a general name of the food for the infant, just as dinner is a general name of food for the adult.

This general dinner (milk) of the infant should also be modified in its various parts to suit the digestion of the individual infant.

Perhaps it would be of interest to know what materials were needed, and what processes were gone through with in carrying out the prescription of the physician.

A laboratory such as that described has already been established in Boston, and is in successful operation, a number of physicians having found it to be an indispensable adjunct to their daily practice.

An important matter is the careful supervision of herds of cows especially selected as to breed and systematically fed, so that the analysis of their milk should be of an almost unvarying percentage. The morning's milk of these cows, milked into glass and kept scrupulously clean, is rapidly cooled and in a few hours delivered at the laboratory. The atmosphere of the laboratory is kept pure and fresh by means of a large fan that keeps up a constant outward current of air. The laboratory itself is lined with white tiles, and contains a separator by means of which a stable 16 per cent. cream can be quickly obtained from the milk. There is also a large sterilizer into which not only steam can be introduced, but in which the milk can be exposed to high or low temperatures, at the will of the modifier.

Having once obtained a pure, clean skimmed milk and cream of a stable percentage, it is merely a matter of mathematic calculation to combine these fluids in such proportions as to produce a mixture in the percentages of fats and albuminoids prescribed by the physician.

The sugar percentage is obtained in like manner by using a carefully prepared 20 per cent. solution of milk sugar and distilled water.

Diagrams were made to show the prescriptions written by the physicians in fat, sugar, and albuminoid percentages, the same prescriptions translated into drams and ounces by the milk-modifier, and the figures returned by the chemist to whom the modified milk was sent to test the accuracy of the modifier's calculations.

I have had a large number of test analyses made, so that there is no longer a doubt but that fairly exact combinations can be made in this way.

As the chemistry of the mineral matter in woman's milk is so little known, it is better to ignore that element for the present. Three figures only need be remembered, corresponding to the percentages of fat, sugar, and albuminoids in average human milk—namely, 4, 7, and 1.50.

Starting with these figures the physician can then easily change one or more of them, either to increase or decrease, according to the need of the especial infant.

As objection has been made to sterilizing at 212° F., this could just as well be done at the safer and lower temperature of 167° F. in the laboratory sterilizer.

THERAPEUTIC NOTES.

For Burns.—

℞.—Iodoformi . . . . 1 part.
Acid. boric. } . . . āā 5 parts.
Antipyrin. }
Vaselin. . . . . 50 "
M. et ft. ung.
S.—Apply topically.

RECLUS, *La Sem. Méd.*, No. 17.

For Pruritus.—

℞.—Menthol. . . . . gr. xij.
Alcohol. . . . . f ℥jss.
Aquæ destil. . . . . f ℥iij.
Acid. acetic. . . . . f ℥j.—M.
S.—Apply with a sponge.

La Méd. Mod., No. 10; *Münch. med. Woch.*, No. 15.

Non-bitter Quinine.—

℞.—Quininæ sulphat. . . . gr. xv.
Acid. sulphuric. dilut. . . . ♏xv.
Spts. menth. piper. . . . f ℥ijss.
Solutio. saccharin. saturat. . . f ℥v.
Aquæ destillat. . . . . f ℥vj.—M.

Journ. de Méd. de Paris.

The Treatment of Fecal Impaction by Means of Galvanism.—SOUTAKIS (*Gaz. Méd. d'Orient*, 1892, p. 20) reports the case of a woman, sixty-three years old, in whom constipation had existed for five days, with symptoms of fecal impaction. Ordinary remedies had been employed, but without avail. Repeated intra-rectal applications of galvanism, by means of a suitable sound, were followed by active intestinal peristalsis, and the evacuation of a large quantity of scybalous fecal matter.

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SATURDAY, JUNE 4, 1892.

THE "MEDICAL MIRROR" ON NOSTRUMS.

AN esteemed contemporary applies the following elegant epithets to those that believe the medical profession should not become a mere appendage to the trade of the drug-manufacturer, and that selling nostrums is not quite the same as the healing and prophylaxis of disease: "Two-for-a-nickle," "small-bore," "small-bores half-and-half," "shoddy pretenders of the medical profession," "bombastic boasters and pretenders," "hump-backed members," etc. We have no doubt the superior perception of the readers of our urbane co-laborer will enable them to understand how "pharisaism" may be "ethical," and also to distinguish clearly the subtle difference, hidden from us, between "small-bores," and "small-bores half-and-half."

But such evidences as these of "local color" are introductory to the charmingly naïve explanation that the opposition of the "hump-backed" is solely a question of sour-grapes. The "two-for-a-nickel," our contemporary avers, are disgruntled, because they have no practice or standing "in their own bailiwick," and having no practice, they have not been asked to give their opinion of the "so-called proprietary medicines" made by "the practical, pushing pharmaceutical world," which has "secured good traveling men to present their supplies to the profession, having convinced them [*sic*] favorably through the medium of medical journals and attractive circulars." This is delicious! Barkis was, certainly, never more willin', nor ever more regardless of English grammar.

Somewhere, we have seen an amusing and suggestive toy. It also was a mirror, of convex, cylindrical pattern, placed at an axis of 180°. Looking a little steadily at it, behind one's own ludicrously distorted image, the eye caught another reflection of the figure of a squat Chinese caricature, wagging its head with a satyr's grin. The real china figure above, cunningly reflected in the distortion mirror, would smile and bow continual assent for several minutes, for so small an amount as a penny placed in its huge mouth; but, the larger the coin the more wide-mouthed the cunning grin, the more energetic, subservient, and long-lasting the bows!

* * * * *

How easy it is to ascribe mean motives to those who may oppose our own pet vice. The spoilsman in politics cannot comprehend the high-principled devotion that places public welfare above partisanship, and straightway he raises the cry of "Pharisee!" The spoilsman in medicine, without the faintest glimmer of the pure light that illumines the soul of the true physician, is roused to frenzy by the exposure of his methods, and spits out of the blackness, venom that falls harmlessly wide of its mark. That was shrewd advice of the old lawyer to his son: "When law and justice are both against you, talk around the case and abuse the plaintiff's attorney." The advice has not been wasted on *The Medical Mirror*.

But what can the *Mirror* expect to gain by its adoption of the methods of the pettifogger? The issue to be presented at Detroit to the representatives of American medicine is clear-cut and direct. Not any individual, but the largest County Society and the largest State Society in affiliation with the American Medical Association will, by the unanimous action of well-attended meetings, appear as plaintiffs. The nostrum manufacturers and their journalistic allies cannot well hope to silence by slander two such bodies.

The law is plain. Section 5 of that article of the Code of Ethics which treats of "Duties for the Support of Professional Character," declares it to be "reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines or in any way to promote the use of them."

Justice is on the same side, "for"—to quote the same section of the same Code of Ethics—"if such nostrum be of real efficacy any concealment regarding it is inconsistent with beneficence and with professional liberality, and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice."

Columns of abuse and vituperation cannot obscure these luminous facts. The code is still the unrepealed law of the American Medical Association; and whoever claims good standing in that Association must be prepared to prove his obedience to the law. Most certainly the trustees of *The Journal* should be held to strict accountability in their management of that sacred trust.

If the law is oppressive let the open attempt be made to repeal it. How hopeless such an attempt would be, *The Mirror* and the nostrum-makers well know, or long ere this it would have been made. The law cannot be repealed, for it is founded on a principle that is indeed antiquated but can never become obsolete, on the eternal principle of right. The terse language of the code expresses this beyond the necessity of a single added word.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Seventh Annual Meeting, held at Washington, D. C., May 24, 25, 26, 1892.

(Continued from page 615.)

SECOND DAY—MAY 25TH.

DR. F. T. MILES, of Baltimore, reported "A Case Presenting the Symptoms of Landry's Paralysis, with Recovery." The condition was thought to be dependent upon a polyneuritis. The clinical picture bore a close resemblance to that of acute ascending paralysis. It was especially noted that the faradic contractility was preserved. The paralysis was of gradual onset, progressively invading the body from below upward. There was an absence of pain, spontaneous or upon pressure. The full text of the paper is to appear in a subsequent number of THE NEWS.

DR. ALEXANDER MCPHEDRAN, of Toronto, reported "A Case Showing the Symptoms of Landry's Paralysis; Recovering." A clerk, twenty-six years old, with the exception of malarial fever fifteen years ago had always been healthy. His present illness began December 2, 1891. For three or four days before this, he had noticed uncomfortable sensations in the feet, which he supposed to be due to his boots. On the evening of December 2d, after stooping to close a safe, he found it difficult to rise again to the erect position. On the following morning, on rising, he found his legs to be very weak; he was able to dress and walk down stairs, but had immediately to lie down on a sofa. While dressing, he first found trouble in the use of his hands, and then some muscular pains in the forearms and shoulders. The electric reactions were normal. On December 4th, the paralysis of all the extremities was complete. The muscles of the trunk and neck were also involved, so that the head could scarcely be raised from the pillow. Speech, swallowing, and breathing were unaffected; sensation was normal; the bladder and the rectum acted normally; the knee-jerk was absent. On December 10th, the speech became somewhat thick. No other change was noted in the symptoms. On December 12th, swallowing was slightly affected, so that there was considerable difficulty in taking soft food. This difficulty soon improved and disappeared in a few days. On December 13th, some pain was felt in the lumbar region; this was relieved by heat, but recurred frequently for a week. On December 20th, the reflexes were still absent; there was no wasting; no tendency to bedsores; the man was able to move his hands and forearms slightly. On January 1st, motility had to a slight degree returned in all of the extremities, being most advanced in the upper. The patient was able to maintain the sitting posture in an arm-chair and to hold the head erect for a few minutes without support. The knee-jerk was quite distinct on the right and slightly developed on the left. On February 3d, the man was able to walk a few steps unsupported; he used his hands freely, though the muscular power was still deficient. He continued to improve, and was soon able to walk freely; the knee-jerk became somewhat exaggerated; there was no ankle-clonus. Sitting with his elbows resting on the arms of his chair and fingers extended, there was marked tremor of the forearms and hands while the position was maintained. On April 20th, the man appeared vigorous and walked well, but if he allowed the knees to bend much they would give way under him; the knee-jerk was increased. The electric reactions continued normal throughout. The spleen could not be felt at any time, although the area of dulness was slightly increased.

In the discussion, DR. CARY, of Buffalo, reported a case in which there was paralysis of the lower extremities and of the sphincters and finally paralysis of the upper extremities, with interference with the respiration, so that suffocation was feared. The pulse rose to 130 per minute. The power of deglutition and of phonation was lost. The symptoms lasted for two or three days, when improvement set in and the condition gradually subsided in the way in which it began. At the expiration of a year the man was about well. The case was considered one of Landry's paralysis by several physicians by whom it was seen.

DR. THOMSON expressed the view that the involvement of the sphincters would seem to exclude the case as one of acute ascending paralysis.

DR. M. ALLEN STARR, of New York, presented a paper entitled "Local Anesthesia as a Guide in the Diagnosis of Lesions of the Lower Spinal Cord." He maintained that in testing sensibility it is not enough to ask a patient whether he feels the touch of the cotton-wool, or the tip of the finger, or the warm or cold test-tube, or the prick of the needle, or the sting of a faradic brush; nor is it sufficient to touch two parts successively, and demand that he compare a sensation with a memory. He should always be tested upon two surfaces simulta-

neously, and asked if any difference is felt between the sensations.

In spinal affections the face is a convenient surface with which to make comparisons; and in the diseases of the lower region of the cord, the arms and trunk may be used as a standard of normal feeling.

Dr. Starr reported twelve cases that he had collected, including six that he had himself observed, in which lesions of the spinal cord were attended with definite areas of anesthesia. From a study of these he endeavored to show that a limited area of anesthesia is produced by a limited lesion in the spinal cord; that as the lesion ascends the cord from its lowest limit, the area of anesthesia extends in a definite manner upon the surface of the body; and that the situation and shape of the area of anesthesia is a positive indication of the level of the lesion in the spinal cord. It appears that, as the centers of control of the bladder and rectum are uniformly affected together, they must be adjacent to one another. The control of the sphincters is lost when the lesion involves the lower three sacral segments, and the centers probably lie in the lower two segments of the cord. Seven concentric zones of anesthesia were determined in conjunction with lesions of the lower part of the spinal cord.

The *first zone* is oval-shaped, small in extent, and includes the perineum, the posterior part of the scrotum in males, the vagina in females. It also includes the mucous membrane of the rectum.

The *second zone* is heart-shaped, with the apex above, and includes the entire scrotum and posterior surface of the penis and mucous membrane of the urethra in males—the entire genitals of the female, except the outer surface of the labia majora and the mons veneris.

The *third zone* involves a greater surface of the buttocks and extends down the back of the thighs over a triangular area, the apex of which is directed downward. This has been named the "saddle-shaped area," approximately coinciding with the surface of the seat in contact with the saddle when riding. A zone of anesthesia of this shape is due to a lesion involving the fifth, fourth, and third sacral segments.

The *fourth zone* is of a similar shape to the third, but more extensive, a greater surface on the back of the thighs being involved; and the anesthesia extends in a band almost as low as the popliteal space. As the smaller zone is due to a lesion at the third sacral segment, and the next larger zone is due to a lesion in the fifth lumbar segment, it is allowable to conclude that this region corresponds with the second and first sacral segments.

The *fifth zone* of anesthesia includes the first four zones and extends down the back of the thigh through the popliteal space in a band, and then descends on the outer surface of the leg to the foot. In some cases it ends at the ankle, in others it involves the entire side of the foot, dorsum, and sole, and three and a half toes. When a lesion extends from the sacral into the lumbar cord the anesthesia extends from the thigh down the outer side of the leg. This area then corresponds to the fifth lumbar segment of the cord.

The *sixth zone* of anesthesia is produced by a lesion of the third lumbar segment; the entire back of the thighs and legs is anesthetic and the front of the thighs is also anesthetic, except over a funnel-shaped zone that extends from above downward, the narrow tube of the funnel reaching along the shin even to the foot. This zone will probably later be separated into two separate parts corresponding to lesions of the fourth and third lumbar segments.

The *last* and *largest zone* of anesthesia is produced by a lesion of the four lower lumbar segments—that is, by destruction of all but the first lumbar segment of the cord. The line of anesthesia is much lower in front than behind, and follows the line of Poupart's ligament. It is only when the first lumbar segment of the cord is invaded that the abdominal wall becomes anesthetic.

From this level upward the zone of anesthesia extends around the body in a girdle, and there is no difficulty in locating the level of the lesion in the dorsal cord.

In all of these lesions and areas of anesthesia, the *anus, the perineum, and the genitals are included in the insensitive region.*

It thus becomes evident that a careful study of disturbances of sensation is a valuable aid in the diagnosis of the situation of lesions in the spinal cord and cauda equina. It is, however, to be remembered that anesthesia is but one of a series of symptoms entering into that diagnosis, and that the condition of the reflexes and the power, tone and electric reactions of the muscles are not to be neglected in the examination of any case. It is only when *all* of the signs of a local lesion coincide that the diagnosis is an absolute one.

DR. MORRIS J. LEWIS presented a paper entitled "A Study of the Seasonal Relations of Chorea and Rheumatism for a Period of Fifteen Years—1876 to 1890, inclusive." The conclusions arrived at were based upon the months of onset of 1383 separate attacks of chorea observed in Philadelphia and in Boston; and of 673 separate attacks of acute articular rheumatism observed in Philadelphia. A distinct seasonal relationship was found to exist between chorea and rheumatism. There is a marked resemblance in form between the chorea and rheumatism tracings and the tracing representing the total amount of sickness present in the community per month. This monthly variation in amount of sickness is probably not a cause of the fluctuation in the chorea and rheumatism tracings, but is itself probably due to the same influence. While over-study assuredly plays a most important rôle in predisposing children to chorea, the months of greatest study, and therefore presumably of the greatest depression of bodily vigor, do not with any regularity coincide with, or even precede, the months of greatest frequency of this disease. It is more than probable that "weather" is one of the most important predisposing causes of both chorea and rheumatism, although precisely which meteorologic factor is the baneful one does not clearly appear. No one element of "weather" explains fully the fluctuations of these tracings of chorea, although in the barometer and storm statistics the relationship appears to be closer than to any other etiologic factor or factors that have, as yet, been advanced. Either this apparently close relationship must be acknowledged to have an important place in the etiology of these diseases, or else the resemblance must be considered purely accidental—a conclusion that, from a study of the tables prepared, seems most unlikely.

DR. STARR stated that from a study of 356 cases at

the Vanderbilt Clinic during the past four years, he was able to confirm the general conclusions made from the study of Dr. Lewis. He does not think overstudy a prominent cause of chorea. Sixty-five cases were ascribed to fright. In only 18 per cent. was there a history of rheumatism. It is possible that chorea is more common in the spring because disturbances of nutrition culminate in the spring.

DR. HENRY spoke of other than articular manifestations of rheumatism, and stated that many cases in which valvular lesions of the heart exist might be considered rheumatic. Tonsillitis and certain skin-eruptions are also observed in connection with rheumatism. The relation of chorea and rheumatism may be more close than would appear from the statistics presented.

DR. JACOBI expressed the view that it is not so much over-study that exercises an influence in the development of chorea, as it is the conditions associated with denutrition. A large number of other diseases is observed in March and April; at that time of the year the system is run down because of deprivation of fresh air during the winter, ill-nutrition, and sundry other causes. Dr. Jacobi has always believed in the intimate connection between chorea and rheumatism, especially since most of these cases of cardiac disease must be due to rheumatism, although the diagnosis is not made. Infantile rheumatism is overlooked, because infants do not have pronounced symptoms; but in a number of cases in which articular rheumatism exists, chorea and heart-disease are present. The joints are not always examined; the frequency of heart-disease in these cases, however, shows a connection. Growing pains are often doubtless rheumatic, and the subsequent history proves them to be so.

DR. LYMAN expressed his belief in the close connection between chorea and rheumatism.

In reply, DR. LEWIS stated that he could not see how, when spring comes, chorea begins if the confinement of the winter has produced it.

DR. W. H. THOMPSON, of New York, read a paper on "The Significance of Intermission in Functional Nervous Diseases." He stated that all derangement of nervous structure must indeed produce derangement of function, but that the reverse of this statement is not always true. Symptoms are often absent in clear cases of disease. Finer methods of microscopic study often prove that disease is dependent upon structural changes, but intermission in disease cannot be explained by the theory of such structural changes. Structure is not enough to explain the working of a mechanism; something more is always demanded—such as a nutritive and energizing fluid or force. Functional nervous poisons have a selective action on various nervous tissues. No drug acts on all tissues alike.

Modern chemistry has shown that auto-infection is a cause of intermittent diseases. A series of poisons is elaborated by the system, the members of which are similar in action to the nerve-poisons of the Materia Medica, and this is illustrated by the action of coline, neurine and muscarine. Natural antisepsis, as of the stomach, intestines and liver, acts antagonistically to the auto-infection arising in these organs, that are subject to nervous influence, and hence the characteristic of intermission is brought about.

DR. S. WEIR MITCHELL read by title the report of "A Case of Crossed Paralysis of the Thermal Sense Without Other Sensory Loss."

DR. H. A. HARE, of Philadelphia, read a paper entitled "A Collective Investigation in Regard to the Value of Quinine in Malarial Hematuria or Malarial Hemoglobinuria." In answer to a series of questions sent to several hundred physicians in malarial districts, Dr. Hare had received 155 answers pertaining to the subject of the paper. It appeared that there was much contradiction in the answers, and that most of the doubt and mystery surrounding the subject yet remained to be cleared up. As a result of the data gathered, Dr. Hare advised that quinine should be given *before*, and not *during* the paroxysm, because of the irritative action on the kidneys. It seems certain that quinine may produce hematuria, as clinical and experimental evidence demonstrate such a relation. Quinine should not be given in hematuria following chronic malarial poisoning.

DR. ATKINSON expressed the view that quinine does not cause hematuria, but that it brings out the idiosyncrasy of the patient in this respect; he has had a number of cases of hematuria without malarial poisoning, and he suggested the query whether hematuria were not due to a parasitic instead of a malarial influence—for example, from the Bilharzia hematobia. In such cases the quinine could do no good. He had found that turpentine was a very excellent remedy. He had looked for filaria sanguinis hominis in these cases, but had not found them.

DR. TYSON urged the value of quinine as a curative agent in the malarial hematuria of moderate type seen in the Middle States; the condition is different in cases of the severe form of the disease. The mischief has then already been done, and quinine will do no good, and the resulting conditions must be treated. Quinine is the proper remedy as a prophylactic. Dr. Tyson's experience confirmed that of Dr. Atkinson, and he advised the use of the natural astringent mineral waters.

DR. STOCKTON alluded to the treatment by large doses of alum that had been advised some years ago for hematuria. In his experience he had found this to be a most excellent remedy in fifteen-grain doses given every hour.

DR. HENRY stated that hemoglobinuria is consequent upon hemoglobinemia, and that there now need be no doubt as to the diagnosis, because we have certain means of ascertaining whether the cause is due to malarial poisoning or not.

DR. VAUGHAN stated that he did not believe that quinine causes hematuria. In Indiana and Michigan it is a common custom to administer tremendous doses of quinine, but cases of hematuria are rare in these States. It would thus seem that some other factor is at work, since the plasmodium of malaria is the same in all parts of the country.

DR. LOVING expressed the belief that the kidney-change had really taken place before the quinine had been administered.

THIRD DAY—MAY 26TH.

DR. STOCKTON read a paper entitled "Misconceptions and Misnomers Revealed by Modern Gastric Research," which was published in THE MEDICAL NEWS of May 28th.

In the discussion, DR. MUSSER urged looking to the

general side of the question as well as to the local, since the gastric condition is often secondary to other conditions; for instance, the general wear and tear is to be considered and the nutrition is to be improved.

DR. LYMAN also emphasized the importance of attention to the general condition, and spoke especially of the arthropathic diathesis, uterine abnormalities, etc., as complicating the gastric condition.

In reply, DR. STOCKTON wished by no means to deny the necessity of general treatment, but especially desired that all treatment should be guided by examination of the stomach and stomach-contents. When the stomach fails in its work, toxemiæ result, with auto-infection. He particularly emphasized the fact that the stomach often manifested no symptoms directly — that the gastric source of the mischief is not always evident, hiding itself under distant symptoms.

DR. CHARLES CAREY, of Buffalo, N. Y., read a paper on "The Production of Tubular Breathing in Consolidation and Other Conditions of the Lungs," which will be published in a subsequent number of THE MEDICAL NEWS. The paper was illustrated by a number of excellent soft-metal castings of the bronchial tubes and bronchioles.

DR. TYSON asked if the rima glottidis might not possibly also contribute to the production of tubular breathing.

DR. MASON spoke of cases in which effusion exists and bronchial breathing does not sometimes take place.

DR. HARE suggested that the elasticity of the openings of the bronchial tubes might be a possible modifying circumstance in producing tubular breathing, rendering the sounds somewhat different from those developed at the edge of the test-tube used in illustration of the phenomenon.

DR. GRIFFITH expressed the belief that the larynx was the primary factor in the production of the bronchial blow; those sounds produced high up were the most pronounced.

DR. LYMAN suggested that a possible modifying factor as regards the pitch of the sound might reside in the increase or decrease in the number of aërial vibrations dependent upon the precipitation downward or elevation upward of the sound produced.

DR. HURD stated that Professor Maull, of Clark University, had been making some excellent casts of lungs, and had found that the bronchi terminated abruptly and in a manner different from that which had usually been pictured.

In reply, DR. CAREY expressed the view that the bronchial "blow" was heard higher up on the right side than on the left, because the first division of the primary bronchus is higher up on this side than on the other.

DR. SAMUEL C. CHEW, of Baltimore, presented a paper entitled "Different Forms of Cardiac Pain." He considered three kinds of such pain: 1. True angina pectoris with increased arterial tension, occurring in paroxysms, and most frequently associated with aortic or coronary disease. 2. Heart-pain from arterio-sclerosis, and often associated with chronic interstitial nephritis. 3. Heart-pain from attenuation of the heart's walls, occurring in different forms of valvular disease that have produced dilatation of the heart. The full text of the paper is to appear in a subsequent number of THE MEDICAL NEWS.

In discussing the paper, DR. STARR stated that a further class of cardiac pain should be added to the classification of Dr. Chew; for example, there was no room in Dr. Chew's classification for the pain of paroxysmal tachycardia; or for that observed in extreme cases of neurasthenia of vasomotor type. Nothnagel has also shown that pain is a symptom in cardiac disease.

DR. MUSSER expressed the opinion that all cardiac pain is anginal in character, and he alluded to cases in which there is pain in the arms without pain in the heart, but with other symptoms of angina. In such cases he advised absolute rest.

DR. MCPHEDRAN stated that he has found nitroglycerin to act better than amyl nitrite in these cases.

DR. STOCKTON expressed his disbelief in the theory that the chief cause of the pain is dilatation of the left ventricle.

The paper of DR. I. N. DANFORTH, of Chicago, on "Tube-casts and their Diagnostic Value," was read by title. It is to appear in a subsequent number of THE MEDICAL NEWS.

The paper of Dr. James C. Wilson, of Philadelphia, on "Pulsating Pleural Effusions" was also read by title, and is to appear in a subsequent number of THE NEWS.

AMERICAN SURGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Boston, May 31, June 1 and 2, 1892.

FIRST DAY—MAY 31ST. *Morning Session.*

THE President, DR. P. S. CONNER, of Cincinnati, delivered the Annual Address. The ten years of active life of the Association, he said, have been characterized by great extent and accuracy of investigation, by scientific judicious experimentation, by the discovery of important facts, by improvements in the technique of old operations, and by the introduction and general adoption of new procedures. In the study of the causes of disease more positive knowledge has been gained than in all time before, so that in the bacteriologic laboratories a new pathology has been worked out, in large measure revolutionary of both opinion and practice. Speculation and theory have given place to experimentation and fact; and the disease-producing influence of airs, of earths, of waters, have been found to lie in organisms that have been seized upon, separated, classified, and tested.

Since the startling announcement, in 1882, that tuberculosis was dependent upon the presence and action of a definite microörganism that could be isolated, cultivated, and inoculated, a new literature has been written, even a new language created, in which the word "strumous" (except as a synonym of tuberculous) has no more place than the word "phlogiston."

The long-known chronic affections of bone, of joints, of glands, of skin, have been shown to be in great measure the result of the presence and action of a bacillus that everywhere and under all circumstances moves in the same destructive way, though antagonized at every step by the healthy tissues (not seldom successfully), and subject more or less completely to the power of the medical art, directed to the destruction or encapsulation

of the germ, the removal of the infected tissues, or the taking away of the affected part.

The most important work that has been done in connection with surgical tuberculosis is that which has had for its object the discovery and the proper application of a therapeutic agent that will destroy the organism and secure its expulsion from the body or secure such condensation of non-infected tissue about it as shall form a wall and by encapsulation render it harmless. Far better will it be to administer generally or locally a remedy that will remove the bacillus or make it innocuous than to do the most brilliant operation followed by the most rapid healing and recovery in large measure of functional integrity. The end is far from having been reached, but a long step in advance has been made.

Of the three wound-complications that from the earliest times have been the bane of surgery—septic infection, erysipelas, and tetanus—the cause of only the first had been determined a decade ago; that of each is now known.

It is in the treatment of the diseases and injuries of the viscera and their envelopes, however, that the greatest advances in medical art have been made in recent years.

The abdominal cavity, which for so long a time was an almost sacred territory, not to be invaded except under peculiar circumstances and for the relief of a very few morbid conditions, has, because of the secured protection against sepsis, become one of the more common fields of operation in connection with wounds, tumors, obstructions, and infective inflammation.

Penetrating and perforating wounds of the hollow and solid viscera are no longer treated solely by opium and ice with a resulting fatality truly appalling, but by section of the wall, suture of the wound, ligation of the bleeding vessels, and antiseptic plugging, if necessary, of openings in the solid organs. The mortality-rate is still, unfortunately, very high. Not a few of the deaths have been due to the delay, the incompleteness, and the imperfection of the operation, but many must be credited to the damage primarily done. Made by missiles of other than the smallest caliber, a gunshot wound of the stomach, of the intestines, of the mesentery, or of the liver, is likely to prove mortal from shock or hemorrhage, even though treated properly and skilfully, and is almost absolutely certain to do so if fecal extravasation has occurred and septic inflammation has set in. Wounds made by very small balls may be, and have been, recovered from without operative interference, and there is good reason for believing that in the absence of symptoms of active hemorrhage such wounds will do as well, or better, without as with laparotomy. It is as unwise as it is untrue to declare that there are no dangers attendant upon incision of the abdominal walls and exploration of the intestinal tract.

The septic inflammations about the head of the colon, originating so generally in the appendix, have been brought within the province of the surgeon, not, as before, at a late day when the resulting abscess has fortunately come well forward toward the surface, but at an early stage, when, by evacuation of the fluid, with or without removal of the appendix, relief may be afforded and the patient be protected against the lethal effects of perforative peritonitis or perinephritic suppuration. The cases of acute disturbance in the region of the cecum, due to an overloaded bowel or to catarrhal inflammation, will find relief in the future, as in the past, in the therapeutic measures of the physician; but suppurating gangrene producing appendicitis can with safety be treated only by the knife. Whether or not it is advisable to remove, during a quiescent stage, the appendix that has been the seat of repeated attacks of inflammation, is a question as yet unsettled.

An immense amount of work, experimental and operative, has been done in the determination of the proper and most advisable methods of treatment in cases of obstruction, acute and chronic, malignant and non-malignant, at any part of the gastro-intestinal tract. Strictures have been dilated, affected areas removed, anastomosis secured, "cut-offs" established, new openings formed, with the result in favorable cases of effecting cure or affording relief.

Pyloric stenosis, for which ten years ago pylorectomy was all that the surgeon could offer, may now, if of non-malignant character be relieved by digital divulsion through the open stomach, by curetting, by a pyloroplastic operation, or by gastro-enterostomy; and if due to malignant disease, by the latter operation, in every way to be preferred to excision of the carcinomatous mass, being speedier and easier of execution and having a mortality-rate but one-half or perhaps only one-fourth as great. There is a strong and growing feeling that the employment of approximation plates of decalcified bone, of leather, or of potato, or catgut rings or mats, is not only not necessary but rather injurious than otherwise. It is doubtful if operations for carcinoma of the stomach have really been or can be of much service. They certainly have often afforded much temporary relief and are to be resorted to when suffering is great and starvation is imminent; but, on the other hand, the prolongation of life when the operation is recovered from is, with only now and then an exception, but slight.

Malignant disease located in the rectum, too low to be removed through an anterior abdominal incision and too high to be thoroughly extirpated through a perineal one, may be reached from behind after resection of the coccyx, with or without, as necessity may require, resection of the lower portion of the sacrum.

In no other part of intestinal surgery has more been done in thought, in experiment, and in practice, than in that dealing with excisions of the bowel in continuity, rendered necessary on account of wounds, growths or gangrene. As the technique of the operations has been improved, the time of performance has been lessened, the risk to life diminished, and the range of applicability increased. It is still undetermined whether end-to-end or lateral anastomosis is to be preferred; of how much value bone plates or rings or other like aids really are, to the patient at least; how far omental grafts may be required, or how much additional security they afford.

The solid organs have again and again been brought under surgical treatment on account of wounds, of growths, and of tuberculous, parasitic, and suppurative diseases. The kidney, spleen, and even the pancreas, have been removed entirely, the liver in part. The gall-bladder has been opened and its contents removed,

and later sutured and left in place or stitched to the abdominal wall or cut away altogether. Pancreatic cysts have at times been extirpated, at times drained.

The supra-pubic section is now held in high esteem. The treatment of tumors of the bladder has greatly improved and has become more successful. Litholapaxy has taken an established position as the most generally applicable method of dealing with stone, even in young children.

Little has been done in intra-thoracic surgery. Pulmonary abscesses have been evacuated and hydatid cysts have been removed. In a small number of cases pneumonotomy has been performed for tuberculous abscess. Pneumonotomy has been experimentally shown to be easy of performance and attended with no great danger; it will in the future doubtless have a place in the treatment of lung-injuries.

It is in the surgery of the head and spine that the greatest advances have been made, the largest number of new procedures introduced, the most brilliant operations performed; and in these regions more than anywhere else, the surgery of to-day is a new surgery. More and more constantly are all depressed fractures of the skull being treated actively, and basal fractures antiseptically. Stronger and stronger is becoming the conviction of surgeons that fractures of the spine associated with evidence of pressure upon or injury of the cord should not be left to Nature, if the general and local symptoms indicate lesions that can be removed or relieved by elevation or extraction of vertebral fragments, or the lessening of intra-dural tension by opening the sheath.

It has been proved wise to treat bullet-wounds of the brain like other punctured wounds of the organ, by exploring, cleaning, and draining the track; and occasionally it has been found possible to extract the ball through the wound of entrance or a counter-opening in the skull.

Trephining for epilepsy following injury of the skull is no new operation, but of late such treatment has been quite largely employed, not only in cases in which there has been an old fracture or contusion, but in those in which by application of the now well-established rules of cerebral localization, it has been possible to determine the place of a meningeal thickening or of a limited chronic encephalitis, or a new-growth, solid or cystic, acting as an exciting cause of motor disturbance.

Trephining has also been practised for the relief of long-standing severe headache.

Considerable sections of the skull have been taken away to permit of the expansion of the microcephalic brain, but though improvement in the mental condition has followed in certain cases, the operation seems to be of questionable utility. Further investigation must be made into the causes of arrested cerebral development, and as to how far it is productive of, and how far consequent upon premature ossification of the cranium.

Insanity of traumatic origin has, in a very large proportion of the few cases surgically treated, been much improved or cured.

The lateral sinus has been successfully opened in several cases for the removal of pyogenic thrombi.

In not a few cases intra-cranial abscesses have been definitely located and operatively relieved.

The most brilliant chapter in the history of brain surgery in recent times, however, is that relating to tumors. It has become possible to locate, with close approximation to exactness, the position of the neoplasm and its character.

Much less operative work has been done upon the spine than upon the head. Abscesses have been evacuated for the relief of paralysis. Tumors pressing upon the cord have been removed.

Congenital malformations, meningocele, encephalocele, and spina bifida, have been subjected to surgical treatment, with increasing success as improvements have been made in the methods of execution. Renewed attempts have been made to permanently get rid of intra-ventricular effusions by tapping and drainage, but the results have not been what might be desired, whether the old route to the ventricle has been followed or the new lateral one.

DR. JOHN B. ROBERTS, of Philadelphia, read a paper entitled "The Treatment of Uncomplicated Fractures of the Lower End of the Humerus." The following are the conclusions presented:

In the treatment of fractures of the lower extremity of the humerus, the divergent angle between the axes of the arm and forearm must be preserved; and hence dressings that interfere with the normal difference in the level of the radius and ulna are not permissible.

Fractures of the lower extremity of the humerus of ordinary severity are, as a rule, more successfully treated in the extended than in the flexed position, because the "carrying function" is less liable to be impaired.

Passive motion at an early date is harmful; and should be deferred until union has occurred and the dressings have been finally removed.

Good results as to anatomic conformation and as to motion are generally to be expected and can usually be obtained.

Recent fractures in which satisfactory coaptation is not obtainable under anesthesia may with propriety be subjected to exploratory aseptic incisions. Old fractures in which deformity and impairment of function are marked, may, within certain limitations, be subjected to re-fracture or osteotomy, for the relief of these conditions.

DR. JOHN E. OWENS, of Chicago, stated that he had never treated fractures of the lower extremity of the humerus in the extended position. The treatment of such fractures in the extended position seems to recommend itself for the following reasons: In the extended position there is no room in the olecranon fossa for neoplastic deposits; the superabundance of soft tissues in front of the joint when the arm is flexed masks the symptoms; the soft tissues in front of the arm present more opportunity for laceration and cicatricial contraction; in the extended position no traction is made upon the vessels and nerves; and the natural angularity between the arm and forearm is preserved.

Dr. Owens had experienced considerable timidity in the treatment of fractures at the elbow, on account of the impaired mobility that often results. The natural position of the arm in relaxation is one of flexion. He had treated these fractures in the flexed position. The extended position may cause tilting forward of the upper extremity of the lower fragment or its rotation forward, or hyper-extension may be caused.

Passive motion is resorted to in four or five weeks to an extent short of causing suffering. The material used for the splint is plaster-of-Paris. Dr. Owens had treated many of these fractures in cases in which the injury resulted from railroad accidents, and in which suits for damages are common, but he knew of no case in which the question of defective treatment entered successfully.

DR. JOHN H. PACKARD, of Philadelphia, remarked that it was often difficult to tell the exact character of a fracture at the elbow-joint even under the most favorable opportunities for examination. He thought that the carrying function was rarely perfectly maintained under any plan of treatment. After fracture running into the joint there is liability to the formation of adhesions. He thought that passive motion should be resorted to before the organization of these adhesions. He advocated treatment of these fractures in the flexed position, and described a splint of sheet zinc that he had used with satisfaction.

DR. CHARLES B. PORTER, of Boston, contended that the treatment advocated in the paper violated one of the first principles in the treatment of fracture—that is, to place the muscles in a state of relaxation. In the extended position the muscles that should be relaxed are not at rest. He had never seen any statistics in regard to the results of treatment of fracture in the extended position, in comparison with those treated by the the flexed position. Until these are forthcoming, the profession will be unwilling to accept this as the best method of treatment. He therefore adhered to the treatment of these fractures in the flexed position. Before the fracture is dressed, it should be adjusted under ether and then not disturbed for two or three days, and, if found in position, not again dressed for a week or ten days. In old fractures, if there is sufficient deformity to demand osteotomy, resection of the elbow is better and may secure a very useful arm.

DR. J. FORD THOMPSON, of Washington, D. C., expressed his disapproval of the plan of treating fractures of the lower extremity of the humerus by means of a right-angled splint. In his practice he adopted that plan of treatment which permitted the axes of the fragments to be brought into relation with each other. This he had found to be the extended position. In two cases of compound fracture he had been unable to bring the fragments into line until the forearm was extended. The difficulty about the extended position is that it is disagreeable and uncomfortable to the patient. He considered plaster-of-Paris to be the best dressing.

DR. A. G. GERSTER, of New York, maintained that the bad results that are often seen after fractures at the lower extremity of the humerus, are not necessarily due to the method of treatment. In several cases in which he had had an opportunity to examine the joint, he had found that the trouble was due to the throwing out of callus at points where the callus has been stripped off. Bad results are also often due to insufficient examination. Anesthesia is not employed, and the dislocation that may accompany the fracture is not recognized. In the treatment of the fracture, after replacing the fragments, such methods must be employed as will hold the fragments in place. The flexed or extended position must be employed as necessary. He had found that, as a rule, the fragments were best held in place by treatment in extension. He does not employ passive motion, and considers it useless and often harmful.

DR. STEPHEN H. WEEKS, of Portland, Me., stated that it was his custom to treat supra-condyloid fractures of the humerus in a position of flexion, but he was satisfied that satisfactory results are secured by different methods of treatment.

DR. T. J. DUNOTT, of Harrisburg, Pa., expressed the opinion that the manner in which the injury had been received had much to do with the ultimate result. The flexed position would give a good result in many of these fractures associated with severe injuries. He prefers to treat the arm in such a position that the radius and ulna are parallel. In many cases in which great injury is done to the soft parts no splint can be applied, and under such circumstances the arm should be laid on a pillow and lead-water and laudanum applied for some days, until the tumefaction subsides. If necessary, incision into the tense tissues is made.

DR. W. H. CARMALT, of New Haven, stated that in some cases the ulna acted as a wedge between the two fragments at the lower extremity of the humerus, forcing them apart, and reported a case recently treated in the flexed position, extension being employed by means of weights, a satisfactory result having been obtained.

DR. J. COLLINS WARREN, of Boston, stated that he had observed the difficulty mentioned by Dr. Carmalt, but had attributed it to drawing forward of the condyles rather than to sinking in of the ulna. Dr. Bigelow had laid down the excellent rule of going through the movements for reducing a dislocation at the elbow in these cases. In this way the danger of overlooking a dislocation is avoided, and if there is simply a fracture the manipulations mould the bone into place. The flexed position, with an internal angular splint, seems to be the best method.

Afternoon Session.

DR. JOHN B. ROBERTS, of Philadelphia, read a paper entitled "The Treatment of Uncomplicated Fractures of the Base of the Radius." The following conclusions were presented:

Fractures of the lower extremity of the radius vary comparatively little in their general characteristics, because but one form is usual.

Muscular action has little or nothing to do with producing or maintaining the deformity.

Immediate reduction of the fragments is the essential of treatment.

Many of the splints devised for the treatment of this fracture have been constructed in ignorance of the pathology of the condition.

The ordinary fracture of the lower extremity of the radius usually requires no splint, and should be dressed with a wristlet of adhesive plaster or bandage.

When a splint is required, a narrow, short dorsal splint, fixing the wrist, is all that is necessary.

The method of dressing here advocated is the best, because it annoys the patient as little as possible, by avoiding cumbersome appliances, and permits free voluntary movements of all the finger-joints.

Passive motion is unnecessary until union has occurred and the dressings have been finally removed.

Good use of the wrist and fingers is early obtained,

and the anatomic conformation is restored as well as, and perhaps better than, by other more complicated dressings.

Old fractures which have been improperly treated, by omission of immediate reduction, may with considerable success be subjected to re-fracture at the expiration of six weeks or more. At later periods readjustment may be possible only by osteotomy, which is a legitimate means of treatment.

DR. JOHN H. PACKARD, of Philadelphia, stated that in 1879 he had read a paper on this subject before the American Medical Association, in which he took the ground that the great difficulty in many of these cases arose from non-reduction. If the fracture of the lower extremity of the radius, commonly known as Colles's fracture, is once reduced, there is little tendency to reproduction of the deformity. Many physicians think that all that is necessary is to apply the proper dressing. The most important step in the treatment is reduction. He did not agree with the fifth proposition, that no splint is required. He employs an anterior splint padded to fit the curve of the radius and reaching to the ball of the thumb. The patient can use the fingers freely. In ordinary cases this simple splint suffices.

DR. CHARLES B. PORTER, of Boston, emphasized the necessity of complete anesthesia, then complete reduction and breaking up of the impaction, and then the application of posterior and anterior splints; after a week or ten days he allows motion of the fingers, and in two weeks motion at the wrist. He considers passive motion unnecessary, except in old people in whom there is a rheumatic or gouty tendency.

DR. J. FORD THOMPSON, of Washington, dwelt upon the disastrous results that often followed failure to reduce the displacement, or the use of improper dressings. After reduction of the fragments he applies anterior and posterior splints secured lightly to the arm. He had not, as a rule, found it necessary to employ ether to facilitate reduction. In cases in which there was severe pain following the application of the ordinary splint, instant relief followed the application of a plaster splint, the hand being carried well to the ulnar side. In several cases in which the hands were useless from the inflammation of the sheaths of the tendons he had tried to break the adhesions up under repeated administration of anesthetics, but the results had not been decided.

DR. JOSEPH RANSOHOFF, of Cincinnati, stated that in some cases the reduction could not be effected so readily as had been indicated. He had had three or four cases in which extension would not overcome the difficulty, and in such cases hyper-extension was resorted to. In the treatment he is partial to the Levis splint. After a week or ten days passive motion is resorted to.

DR. CHARLES B. NANCREDE, of Ann Arbor, called attention to the fact that a certain amount of the bone-tissue at the seat of fracture is destroyed, so that some deformity will necessarily follow. Reduction is the most important measure in the treatment. The fragments are then to be held in place by suitable apparatus.

DR. JOHN HOMANS, of Boston, read a paper on "Fibroid Tumors of the Uterus," which will be published in a subsequent number of THE NEWS.

(To be continued.)

CORRESPONDENCE.

A CORRECTION FROM DR. WOOD.

To the Editor of THE MEDICAL NEWS,

SIR: I beg to correct an error into which your reporter (MEDICAL NEWS, May 28th, p. 605) has fallen as to my advice in regard to the disposal of homicidal maniacs. I did not say what is attributed to me. In substance, I said that it was justifiable to put to death certain homicidal maniacs whose whole lives are given up to planning to kill their attendants, and that it was not right to tax people to pay others to risk their lives in feeding and otherwise taking care of such human tigers.

H. C. WOOD, M.D.

1925 CHESTNUT STREET.

NEWS ITEMS.

The British Medical Association will hold its sixtieth annual meeting at Nottingham, July 26, 27, 28, 29, 1892.

The "Address in Medicine" will be delivered by Dr. James Cuming, of Belfast; the "Address in Surgery," by Dr. W. H. Hingston, of Montreal; the "Address in Bacteriology," by Dr. German Sims Woodhead, of London.

In the Section of Medicine a discussion on "Peripheral Neuritis" will be opened by Dr. J. S. Bristowe.

A discussion on "The Prognosis and Treatment of Ascites" will be opened by Dr. W. B. Cheadle.

The following papers are announced:

"On the Value of Perimeter Measurements in the Diagnosis of Local Brain Disease," by Dr. Byrom Bramwell. "On Some Complications and Sequelæ of the Infectious Fevers," by Mr. Francis Hawkins. "Subacute Non-rheumatic Myocarditis," by Dr. Laurence Humphry. "Treatment of Pneumonia by the Ice-bag," by Dr. D. B. Lees. "The Association of Sensory Disorders with Visceral Disease," by Dr. J. Mackenzie. "Note on the Relief of Ascites by Establishing a Fistulous Communication with the Rectum by Operation," by Dr. Murray. "Peripleuritis," by Dr. P. Blaikie Smith.

In the Section of Surgery a discussion on "The Surgery of the Thorax" will be opened by Mr. Rickman J. Godlee. A discussion on "The Surgery of the Liver and Gall-bladder" will be opened by Mr. A. W. Mayo Robson. A discussion on "The Treatment of Spinal Abscess" will be opened by Mr. W. Watson Cheyne.

The following papers are announced:

"On Appendicitis," by Mr. H. Gilbert Barling. "On Rectal Cancer," by Mr. Harrison Cripps. "The Restoration of the Lost Function of Micturition," by Mr. Reginald Harrison. "The Later Results of Laminectomy for Angular Curvature," by Mr. W. Arbuthnot Lane. "On Pancreatic Surgery," by Mr. Jordan Lloyd. "A Case of Simultaneous Ligature of the Subclavian and Common Carotid Arteries for Aneurism of the Innominate Artery," by Dr. C. H. Marriott. "A Case of Supra-pubic Lithotomy," by Dr. W. Newman. "On the Use of the Omentum in Intra-peritoneal Operations," by Dr. N. Senn. "Practical Points in the Surgery of Cancer," by Dr. Herbert Snow. "A Review of Twenty-

five Cases Illustrating the Surgery of the Thyroid Gland," by Dr. C. J. Symonds. Mr. J. R. Morison will exhibit (1) a specimen from a successful case of ileo-colostomy for chronic ileo-colic intussusception; (2) a specimen from a case of combined excision of the pylorus and gastro-enterostomy.

In the Section of Obstetric Medicine, a discussion upon "The Treatment of Uterine Fibroids" will be opened by Mr. J. Knowsley Thornton. A discussion on "Post-partum Hemorrhage" will be opened by Mr. G. E. Herman.

The following papers are announced:

"The Proper Use of Midwifery Forceps," by Dr. A. E. Aust-Lawrence. "A Consideration of the Less Obvious Causes of Retardation in the First Stage of Labor," by Mr. W. Bain. "Note on a Case of Cystocele Treated by Stoltz's Method," by Mr. E. S. Bishop. "Ergot as a Muscular Tonic during Pregnancy," by Mr. F. Borough. "On a Case of Total Extirpation of the Uterus through the Vagina for Cancer, with the Result One Year after the Operation," by Mr. W. J. Cant. "The Medicinal and Mechanical Methods of Expediting Pregnancy," by Mr. J. Dysart McCaw. "On the Electrical Treatment of Uterine Fibroids, Scientifically Considered," by Dr. H. McClure. "On Post-partum Hemorrhage," by Dr. I. More Madden. "Stoltz's Operation for Cystocele," by Dr. A. D. Leith Napier.

In the Section of Public Medicine the following subjects are suggested as suitable for discussion, but the list is open to modification: 1. "Legal Restraint upon the Employment of Women in Factories before and after Childbirth." 2. "The Use and Abuse of Infantile Insurance." 3. "Coroner's Inquests." 4. "Disposal of the Dead in the Future; Cemeteries and Crematoria." 5. "The Future of Hospital Isolation for Infectious Diseases." 6. "The Isolation of Measles." 7. "The Notification of Erysipelas and Puerperal Fever." 8. "The Diminished Mortality from Scarlet Fever." 9. "Is Smallpox Dying Out in the British Isles?" 10. "Endemic Typhoid." 11. "Epidemic Alternations." 12. "Offensive Trades in Towns." 13. "Methods of Dealing with Town Refuse in the Midst of Populated Districts." 14. "Ventilation of Town Sewers." 15. "The Condemnation of Tuberculous Meat: to what Extent should this be Carried?" 16. "Relation of Medical Officer of Health to the Sanitary Staff." 17. "Epidemic Influenza; the Attitude of Public Authorities toward it."

The following papers are announced:

"A Contribution on the Condemnation of Tuberculous Meat," by Dr. J. S. Cameron. "On the Influenza Epidemics of 1891–2 Considered Mainly from a Statistical Standpoint," by Dr. F. A. Dixey. "Contribution on Disposal of the Dead in the Future," by Mr. Joseph Loane. "On an Epidemic of Cerebro-spinal Meningitis," by Mr. H. G. H. Monk. "On Epidemic Enteric Fever," by Dr. Scott Tew.

In the Section of Psychology, the President, Mr. William Bevan Lewis, will deliver an Introductory Address.

The two following subjects have been chosen for special discussion: 1. "Psychoses after Influenza," to be opened by Dr. Julius Althaus. 2. "Insanity as a Plea for Divorce," to be opened by Dr. Lionel A. Weatherley.

The following papers are announced:

"Variations in Type of General Paralysis," by Mr. F. St. J. Bullen. "Minor Psychical Disturbance in Women," by Dr. Harry Campbell. "Paranoia and its Relationships," by Dr. Dunn. "The Pathological Anatomy of Acute Encephalitis: an Experimental Study," by Dr. Edwin Goodall. "On Microcephaly," by Dr. Robert Jones. "The Value of Hypnotism in Chronic Alcoholism," by Dr. C. Lloyd Tuckey.

In the Section of Pathology the following papers are announced:

"Variability of Microbes," by Mr. J. G. Adami. "Carcinoma of Mamma," by Mr. Cecil Beadles. "Phagocytosis in Relation to Erysipelas, by Mr. T. J. Bokenham. "1. Experimental Epilepsy; 2. Theory of Tumors; 3. Specimens," by Dr. C. Boyce. "Macro- and Microscopic Preparations of Pathological Brains and Spinal Cords, with Lantern Demonstrations," by Dr. Alexander Bruce. "Dystrophia Muscularis," by Dr. Alexander Bruce and Dr. John Thompson. "Museum Casts," by Mr. C. W. Cathcart. "1. Ataxic Paraplegia; 2. Endothelioma of the Dura Mater," by Mr. Mitchell Clarke. "Morbid Conditions of Stomach in Phthisis," by Dr. Soltau Fenwick. "1. Pathology of Jaundice; 2. Pathology of Diabetes," by Dr. Vaughan Harley. "Edema," by Mr. Victor Horsley. "Cerebral Tumor," by Dr. Laurence Humphry. "Carcinoma of Mamma," by Mr. Raymond Johnson. "Pathology of Chlorosis," by Dr. E. Lloyd Jones. "1. Immunity; 2. Specimens of Madura Disease," by Mr. A. A. Kanthack; "Experimental Diphtheritic Paralysis," by Dr. Sidney Martin. "Myxedema," by Mr. George Murray. "Leukocythemia," by Dr. Muir. "Researches in Cancer Pathology," by Dr. Herbert Snow. "Carcinoma of Mamma," by Mr. Harold Stiles. "Diabetes," by Mr. H. J. Tylden. "Morbid Conditions of Bone," by Dr. Alexis Thomson. "Rate of Beat of the Heart in Health and Disease," by Prof. C. J. Roy. "1. Typhoid Fever in Animals; 2. Paralysis from the Poison of Bacillus Pyocyaneus," by Dr. A. Ruffer.

In the Section of Ophthalmology a discussion on the "Treatment of Diseases of the Lachrymal Apparatus" will be opened by Mr. Charles Higgens.

The following papers have been announced:

"Prolapse of the Iris after Simple Cataract Extraction, and its Treatment," by Mr. W. J. Cant. "The Registration of Defects of Color Perception," by Dr. W. F. Edridge-Green. "Notes on a Case of Tumor of Right Orbit; Operation; Recovery," by Dr. J. Farrar. "1. Some Improvements in Perimetry; 2. A Modification of Foerster's Box for Testing the Light-sense; 3. The Treatment of Cataract Extraction and other Wounds by Antiseptics," by Mr. M. B. Fergus. "Chloride of Sodium as a Direct Agent in the Production of Cataract," by Mr. A. V. Ford. "1. Ten Years' Experience of the Effects of the Treatment of Interstitial Keratitis by Syndectomy without the Use of Specific Drugs; 2. A New Operation for the Treatment of Eversion of the Lower Lids Associated with Granular Lids; 3. Further Researches into the Localization of Headaches Due to Various Forms of Ametropia, including Cases of Vertigo, *Petit Mal*, and True Epilepsy, Cured by the Use of Correcting Lenses," by Mr. H. B. Hewetson. "The Pathology of Some Intra-ocular Tumors," by Mr. J. B. Lawford.

"Note on the Relationship of Convergence to Accommodation," by Mr. A. S. Percival. "The Operative Treatment of Trachoma," by Mr. S. Stevenson. "A Complicated Case of Monocular Hemiopia," by Mr. S. J. Taylor. "A Primary Sarcoma of Iris, with Microscopic Sections," by Mr. G. E. Williamson.

In the Section of Diseases of Children, a discussion upon "The Diagnosis and Treatment of Croupous Pneumonia in Children" will be opened by Dr. James F. Goodhart. A discussion on "The Treatment of Severe Club-foot" will be opened by Mr. J. Walsham.

Mr. E. L. Freer will read a paper on "The Treatment of Scoliosis."

In the Section of Pharmacology and Therapeutics a discussion on "Cardiac Tonics and the Indications for their Use" will be opened by Dr. William H. Broadbent. A discussion on "Dyspnea and its Treatment by Drugs" will be opened by Professor W. T. Gairdner.

Prof. Liebreich, of Berlin, has deputed Dr. A. P. Chadbourne to present a communication reporting, the outcome of researches in the laboratory of the former.

In the Section of Laryngology a discussion upon "The Etiology, Pathology, and Treatment of Nasal Neuroses" will be opened by Dr. Donald Stewart and Dr. Adolf Bronner. A discussion upon "Catarrh of the Nose and Throat; its Etiology, Pathology, and Treatment" will be opened by Mr. J. Macintyre. A discussion upon "Granular Pharyngitis; its Etiology and Treatment," will be opened by Mr. T. Mark Hovell.

Mr. Mayo Collier will read a paper on "The Causation of Deflections and other Irregularities of the Nasal Septum;" Dr. Watson P. Williams, a paper on "The Dyspeptic Sore-throat."

Preliminary Program for the Section on Dermatology and Syphilology of the American Medical Association.—

Address by the Chairman, Dr. Bulkley: Recent Advances in the Treatment of Diseases of the Skin.

Louis A. Duhring, M.D., of Philadelphia: Local Treatment of Acute Vesicular Eczema.

C. P. Russell, M.D., of Utica, N. Y.: Eczema of Infancy and Childhood, with Special Reference to Etiology and Dietetic Treatment.

L. Duncan Bulkley, M.D., of New York: Diagnosis and Treatment of Eczema Seborrhoicum.

George T. Elliot, M.D., of New York: Seborrhoic Eczema as a Cause of Alopecia.

B. M. Ricketts, M.D., of Cincinnati, Ohio: Report of Forty Cases of Psoriasis Treated Exclusively with Arsenious Acid.

A. Ravogli, M.D., of Cincinnati, Ohio: The Influence of the Nervous System on Certain Disturbances of the Skin.

W. H. Dunlap, M.D., of Syracuse, N. Y.: An Unusual Case of Pemphigus Hemorrhagicus.

C. P. Russell, M.D., of Utica, N. Y.: Case of Acute Circumscribed Cutaneous Edema.

A. H. Ohmann-Dumesnil, M.D., of St. Louis, Mo.: Some Successful Methods in the Treatment of Alopecia Areata.

James H. Dunn, M.D., of Minneapolis, Minn: A Case of Tubercular Adenitis, with General Alopecia and Pruritus.

Eustathius Chancellor, M.D., of St. Louis, Mo.: The Diagnostic Significance of Diseases of the Finger-nails.

W. H. Righter, M.D., of Topeka, Kansas: Report of a Case of Verruca Papillaris of the Upper and Lower Lips.

Answers to Questions in Question Box.

James C. McGuire, M.D., Washington, D. C.: Excision of the Chancre as a Means of Aborting Syphilis, with a Report of Several Cases.

H. Goldenberg, M.D., of New York: Chancre of the Finger with Special Reference to Adjoining Adenopathy.

W. F. Breakey, M.D., of Ann Arbor, Mich.: A Case of Lupus.

Edward Preble, M.D., of Cleveland, Ohio: On a New and Practical Method of Grouping Affections of the Skin, with a Brief Analysis of One Thousand Cases.

E. Chenery, M.D., of Boston, Mass.: Experiences with Scabies.

L. D. Bulkley, M.D. and H. A. Pulsford, M.D., of New York: Clinical Notes on the Cases of Vegetable Parasitic Diseases Treated at the New York Skin and Cancer Hospitals.

The Medical Society of the State of Washington held its third annual meeting at North Yakima, May 11th and 12th.

The following papers were read: "Report on Practice of Medicine," by C. K. Merriam, of Spokane; "Typhoid Fever and its Treatment," by C. P. Thomas, of Fairhaven; "Report of a Case of Leprosy," by H. C. Willison, of Port Townsend; "Report of Eight Major Amputations," and "Report of a Melanotic Sarcoma of Neck," by J. B. Eagleson, of Seattle; "Report on Ophthalmology and Otology," by A. B. Kibbe, of Seattle; "Some Practical Points on Diseases of the Ear," by L. R. Thomson, of Spokane; "Sympathetic Ophthalmia," by G. H. Mauzey, of Spokane; "Treatment of Immature Cataract by the Kalisch Method," by G. S. Armstrong, of Olympia; "Report of Four Laparotomies," by C. A. Smith, of Seattle; "Treatment of Epilepsy," by C. W. Sharples, of Seattle; "Report on History and Necrology," by G. A. Weed, of Seattle.

The following officers were elected for the ensuing year: *President*, N. Fred. Essig, of Spokane; *First Vice-President*, G. S. Armstrong, of Olympia; *Second Vice-President*, F. M. Bell, of Kelso; *Secretary*, G. D. Shaver, of Tacoma; *Treasurer*, J. B. Eagleson, of Seattle.

The next meeting will be held at Tacoma on the first Wednesday in May, 1893.

The Philadelphia Alumni Society of the Medical Department of the Univereity of Pennsylvania held its first regular meeting at the Colonnade Hotel, Fifteenth and Chestnut Streets, on Saturday evening, May 14th. This Society is a local branch of the parent Alumni Society as provided for in Article VIII. of its constitution, and has elected the following officers:

President: Dr. Roland G. Curtin.

Vice-Presidents: Dr. Edward L. Duer, Dr. S. D. Risley, and Dr. Henry Beates, Jr.

Recording Secretary: Dr. Ellwood R. Kirby.

Corresponding Secretary: Dr. Benj. F. Stahl.

Treasurer: Dr. Joseph P. Tunis.

Executive Committee: Dr. Judson Daland, Dr. A. C.

Wood, Dr. Richard Norris, Dr. William R. Lincoln, and Dr. Harry Toulmin.

It is proposed to hold four meetings during the year, on the second Saturday of the months of November, January, March, and May, which shall be largely of a social character. Already the plan has been heartily indorsed by a large number of graduates, and more than one hundred and twenty-five men have signed the constitution.

Action of the Pennsylvania State Medical Society as regards Nostrums.—At a meeting of the Philadelphia County Medical Society, held May 25, 1892, Dr. John B. Roberts, President, reported that the Medical Society of the State of Pennsylvania had unanimously adopted the resolutions sent up by the Philadelphia County Society, in condemnation of the practice of giving certificates to secret medicines, and of the action of the *Journal of the American Medical Association* in publishing advertisements of such preparations. On motion it was resolved to print one thousand copies of the resolutions of Dr. S. Solis-Cohen's paper, offering the same for distribution at the Detroit meeting of the American Medical Association.

The American Climatological Association will hold its ninth annual meeting at Richfield Springs, N. Y., June 23 and 24, 1892.

CORRECTION.

In the table on page 577 of THE NEWS of May 21, 1892, it was intended to say that "hydroleine" contained salicylic acid, not "salicylic alcohol."

BOOKS AND PAMPHLETS RECEIVED.

Sixth Annual Report of the State Board of Health. Harrisburg: E. K. Meyers, State Printer, 1892.

Pads of Absorbent Gauze as a Substitute for Flat Sponges in Abdominal Surgery. By William E. Ashton, M.D. Reprint, 1892.

A Successful Case of Lateral Anastomosis of the Ileum for Malignant Stricture. By W. E. Ashton, M.D. Reprint, 1892.

Case of Porencephalon in which Trephining was Done. By DeForest Willard, M.D., and J. Hendrie Lloyd, M.D. Reprint, 1892.

The Electro-therapeutics of Gynecology. By Augustus H. Goelet, M.D. Two Volumes. Physicians' Leisure Library. Detroit, Mich.; George S. Davis, 1892.

Myelitis in a Case of Incipient Spinal Sclerosis. By J. T. Eskridge, M.D. Reprint, 1892.

Thirty-two Unselected Abdominal Sections. By Thomas Opie, M.D. Reprint, 1891.

Cancer and Its Treatment. By Daniel Lewis, A.M., M.D., Ph.D. Detroit, Mich.: G. S. Davis, 1892.

A Case of Tracheotomy for Multiple Neoplasms of the Larynx. Clinical Lecture, delivered at Jefferson Medical College Hospital. By J. Solis-Cohen, M.D. Reprint, 1892.

Routine Syringing Out of Cortical Matter in Cataract Extraction. By J. A. Lippincott, M.D. Reprint, 1892.

Thirty-first Annual Report of the Cincinnati Hospital, for the Year Ending December 31, 1891. Cincinnati: Commercial Gazette Job Print, 1892.

Stricture of the Larynx. By J. Solis-Cohen, M.D. Reprint, 1892.

The Symptoms and Pathological Changes in the Upper Air-Passages in Influenza. By J. Solis-Cohen, M.D. Reprint, 1892.

Papers on the Epidemic of Influenza from 1889 to 1892. By Roland G. Curtin, M.D., and Edward W. Watson, M.D. Reprint, 1892.

A Suggestion About Prisms. By James Wallace, M.D. Reprint, 1892.

The Science and Art of Midwifery. By William Thompson Lusk, A.M., M.D. New Edition, Revised and Enlarged, with Numerous Illustrations. New York: D. Appleton & Co., 1892.

Two Cervical Muscle Anomalies in the Negro. By Middleton Mitchell, M.D. Reprint, 1892.

Transactions of the New York State Medical Society for the Year 1891. Vol. VIII. Edited for the Association by E. D. Ferguson, M.D. New York City: Published by the Association.

Diseases of the Urinary Apparatus. Phlegmasic Affections. By John W. S. Gouley, M.D. New York: D. Appleton & Co., 1892.

Diabetes Mellitus and Lesions of the Pancreas. By R. T. Williamson, M.D., of London. Reprint, 1892.

Twentieth Annual Report of the Health Department of the City of Boston, for the Year 1891. Boston: Rockwell & Churchhill, 1892.

Strongylus Rubidus. By Albert Hassall, M.D., and C. W. Stiles, M.D. Reprint, 1892.

Extrait du Bulletin de la Société Zoölogique de France, pour l'année 1891. Notes sur les Parasites—III: Sur l'hôte intermediare l'Echinorhynchus gigas? Par Charles W. Stiles, Ph.D. Paris: Au Siége de la Société Zoölogique de France, 1891.

The Treatment of Sciatic Neuritis by the Local Abstraction of Blood. By F. Gundrum, M.D. Reprint, 1892.

A Neglected Case of Chronic Pleurisy. By William H. Dukeman, M.D. Reprint, 1892.

The Cure of Stricture Simplified. By William H. Dukeman, M.D. Reprint, 1891.

The Bullous Form of Iodic Eruption. By Prince A. Morrow, M.D. Reprint, 1892.

Some Differential Points in the Diagnosis of Syphilis and Tuberculosis, with Illustrative Cases. By Prince A. Morrow, M.D. Reprint, 1892.

The Pathology and Treatment of Tetanus. By D. Braden Kyle, M.D. Reprint, 1892.

Bureau of Information, Circular No. 9, 1891. Biological Teaching in the Colleges of the United States. By John P. Campbell, A.B., Ph.D. (Johns Hopkins). Washington: Government Printing Office. 1891.

Bureau of Information, Circular No. 5, 1891. The History of Higher Education in Ohio. By George W. Knight, Ph.D., and John R. Commons, A.M. Washington: Government Printing Office, 1891.

The Annual Report of the Health of the Imperial Navy, for the Twenty-third Year of Meiji. Tokyo, 1890.

Reports of the Wills Eye Hospital for the Years Ending December 31, 1890, and December 31, 1891. Philadelphia, 1891.

A Series of Fifty Consecutive Operations for Cataract. By Robert L. Randolph, M.D. Reprint, 1892.

Medical Education and Legislation. By George J. Engelmann, M.D. Reprint, 1892.

A Clinical Study of the Ocular Symptoms Found in the So-called Mongolian Types of Idiocy. By Charles A. Oliver, M.D. Reprint, 1892.

The Fourth International Prison Congress, at St. Petersburg, Russia. By C. D. Randall, Official Delegate from the United States. Washington: Government Printing Office, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

FIBROID TUMORS OF THE UTERUS.[1]

BY JOHN HOMANS, M.D.,
OF BOSTON, MASS.

THIS paper is not, in any sense of the word, a treatise or an essay on fibroid tumors, but simply an account of their natural history as I have watched them, their effect on the women that have had them, the means that may be employed when necessary to remove them, and the condition in which patients are left after operation. Nor have I thought it necessary to enumerate and tabulate all my own cases, although this might be interesting to the Association and instructive to me, but I have simply illustrated my remarks by citing a few descriptions applicable to the subject mentioned.

I suppose it is unnecessary for me to define a fibroid tumor of the uterus. We all know them to be aggregations of normal uterine tissues in abnormal situations and masses. They may cause symmetrical enlargement of the uterus, or more or less one-sided enlargement; they may be in the walls of the uterus, or protruding toward its outside, or toward its inner cavity; they may be incorporated with the uterus, or connected with it by a broad attachment, or by a pedicle; or they may be entirely separated from it, and get their nourishment from the vessels of the omentum or mesentery, to which they are adherent; they may grow under the broad ligament, or they may grow directly out into the general cavity of the peritoneum. Certain of them that grow near the cornu of the uterus are sometimes gradually extruded until they are merely connected with the uterus by the Fallopian tube and broad ligament, and have a pedicle as distinct as that of an ovarian pedicle. I have seen this state of things three times, and always on the right side.

Uterine fibroids may be dense or edematous, or filled with lymph-spaces, or they may, in very rare instances, be fibro-cystic, having true cysts as distinct as those in an ovarian tumor, not the dilatations in the substance of the tumor—already mentioned, which are filled with clear yellow or bloody fluid and are simply dilated lymph-spaces, but fibroid tumors, having true cysts on their outer surfaces, with thin walls, and filled with fluid of different densities. I am of the opinion that a certain number of tumors that have been described as fibro-cystic belong to the class I have mentioned as fibroids with dilated lymph-spaces. True fibro-cysts are very rare, and I should say that a frequent operator would not meet with more than one or two in many hundred cases of uterine tumors.

In size these tumors vary from that of a mere dot to masses weighing fifty or more pounds. Their rate of growth is generally slow, by which I mean that several years' growth will be required to produce a tumor the size of one's fist. They are very common. In order to settle this question for myself, I have gone over my records of office-patients. I find that I have seen in my office during the past fifteen years 370 cases of fibroid tumors of the uterus, and, as I have seen many at the hospitals and in consultation, I think I may fairly add 150 more, making in all 520 cases. When one surgeon has seen that number in fifteen years, I think they may be called common. These tumors are said to occur more frequently in the black than in the white race, while ovarian tumors are said to be more common in the whites than in the blacks.

Operations to relieve women of fibroid tumors are rarely necessary, judging from my own experience. Of these 520 cases, I have operated only on sixty, or about 11 per cent. The conditions that should guide us in recommending the removal of the tumors are: when they threaten life by hemorrhage; when they are unbearable from their weight, or from the inconvenience they cause, particularly in the act of stooping or bending, or from their position when they prevent a woman from sitting down; when in a young woman they cause distress, chagrin, and shame, from the alteration they have made in her figure; when they cause so much pain as to make life a burden; when by their presence they so obstruct the circulation as to cause swelling and edema of the limbs, or interfere so much with the action of the digestive and eliminative organs as to cause emaciation and weakness; when they block up the pelvis so as to cause obstruction of the bowels; or when they have caused strangulation of the bowel; or when their pedicles have become twisted—and sometimes the whole uterus becomes twisted on its axis exactly as the pedicle of an ovarian tumor does, and presents the same symptoms, and requires immediate operation.

Death by hemorrhage is very rare. I have knowl-

[1] Read at the meeting of the American Surgical Association, held in Boston, May 31, June 1 and 2, 1892.

edge of only three instances. Many women are blanched, and anemic, and feeble, but they live, and most of them are relieved by curetting, or at times by electrolysis *à la* Apostoli, or by the removal of a pedunculated fibroid from the interior of the uterus, or by enucleating a half-extruded one.

The feeling of weight and inconvenience caused by these tumors is sufficient in some cases to call for their removal, and the sufferer has a right to demand operation, even if life is not threatened, for surgery is not only to save life, but to contribute to its comfort; and there is no class of cases in which the decision of the patient has more weight than in these cases of fibroid tumors. "I do not want to carry this thing any longer; it annoys me. I cannot stoop to button my boots, and I want it removed," said a woman to me. I had put her off several months, and she had abundant time to think the matter over. I thought she had a right to decide the question of operation. I removed the tumor, and she got well.

A growing tumor in a young woman of from fifteen to thirty years old, which has distended the abdomen and is prominent and unsightly, and causes remark, may with propriety be removed, if the sufferer cannot bear to know how she looks, even if the tumor gives rise to no symptoms. It is *her* tumor and *her* life, and *her* body and appearance, and she has a right to look like other women if she wants to.

Some large tumors interfere very little with respiration and nutrition, and cause but little edema and emaciation; while others, not so large, cause great debility. Those tumors that have become entirely separated from the uterus are dangerous from the opportunities they afford for strangulation of the intestine, and should be removed. I have seen a case of death caused by some loops of the bowel becoming strangulated by slipping in between points of adhesion formed between a fibroid that had became wholly separated from the uterus and other loops in a tumor nourished solely by its adventitious adhesions. Such loose-lying fibroids should be removed.

Again, a fibroid may threaten to render delivery impossible by the natural passages. At the same time, Nature will generally get these fibroids out of the way if you will give her a chance. I remember a case of this kind in the practice of Dr. John Benson, of Chatham, New Brunswick. It was a first labor; the tumor was so obstructive that Cæsarean section was seriously considered, but at length the tumor receded and allowed the head to pass. A few weeks after delivery, Dr. Benson sent the lady to me. I opened the abdomen, turned the body of the uterus and both ovaries forward upon the pubes, split the capsule of the tumor and enucleated it from its bed, sewing up the rent in the uterus where its pedicle had arisen from the posterior part of the body near its junction with the neck. Recovery was uneventful. The tumor was about six inches in diameter and weighed two and a half pounds; it was growing, and if it had been allowed to remain would undoubtedly have rendered the next delivery impossible.

At the same time, as I have said, Nature will generally lift these tumors out of the way when the attending accoucheur would think natural delivery impossible. I remember a case in which a large fibroid tumor filled the vagina at the beginning or just before the beginning of labor. I could not move it by pressing on it with my hand, even with a purchase against the wall of the room with my feet, and yet in twenty-four hours Nature had pulled that tumor up and had pushed the cervix, through the orifice of which one could feel the child's head, down into the vagina.

I remember another case of pregnancy at five months in which I advised non-interference, but another gentleman said that the tumor must be removed, as delivery at term would be impossible. This was done and the woman died in two hours. In another case that I remember, a practitioner induced labor somewhat prematurely and ruptured the uterus, and the woman died. Both of these cases could not have done worse if they had been let alone, and they might have done better.

Sometimes these tumors, when quite small, by their position make it impossible for a woman to sit down with comfort. One of my patients said she felt as if she was sitting on a spool, and that she had to stand or lie down to have any comfort. She was sent to me by Dr. W. G. Kimball, of Worthington, Mass. A fibroid about the size of a horse-chestnut, on the posterior and left side of the fundus, was tied and burnt off. Another near it, the size of a boy's marble, was torn off. There was no drainage. Rapid recovery and complete relief followed.

The solid fibroid tumors rarely have any adhesions, and are removed without much difficulty after a little practice. The true fibro-cystic tumors are very rare. In the 520 cases mentioned I am only sure that 8 were fibro-cystic—only about 1.3 per cent. Of these, I did not remove any successfully. In all the operations I was unable to separate the cysts from the bowel and other peritoneal structures. One woman recovered from an incomplete operation. The others all died. Of course, there may have been a carcinomatous element in some of these tumors, as very few of them were followed by autopsies. Most of these operations were attempted many years ago, when my manual dexterity was not as much developed as it is to-day;

but I still regard true fibro-cysts of the uterus as very rare, and, as a rule, very dangerous of removal.

An extraordinary case of twisting of the uterus as the pedicle of a large fibroid tumor of many years' existence was reported by me in the *American Journal of Obstetrics*, 1892, vol. xxv, No. 3. The uterus was twisted one and one-half times on its axis, and the blood-supply was cut off from the tumor and from the ovaries and tubes. The case was fatal, no operation having been done. There was general peritonitis and lobular pneumonia. How this twisting of a great solid tumor and of the uterus could have happened is incomprehensible to me. Here was a solid fibroid tumor, weighing at least six pounds, and this, with the body of the uterus, and with both ovaries, tubes, and broad ligaments, was twisted around one and a half times.

The natural history of 90 per cent. of fibroid tumors is to grow to a size to reach the umbilicus, or to reach higher or lower than this point, and then to remain stationary, and after the menopause to become cretaceous and atrophied. Some of them, I think, shrivel up almost entirely, while others remain as large as a cocoanut without giving rise to great inconvenience. About 10 per cent. of them require removal for one of the various reasons I have mentioned in the earlier part of this paper; others atrophy of themselves, without any treatment being employed. A large number of them are discovered by the attending physician, the women being totally unaware of their presence, though they may have been in the womb for many years.

Patients with fibroid tumors present themselves between the ages of twenty and sixty years, rarely before or after these periods of life. The average age of those on whom I have found it necessary to operate is thirty-nine years. One-quarter of them were about thirty-four years old. The youngest patient on whom I have done abdominal hysterectomy for a fibroid was eighteen, and the oldest sixty-five years of age. Of 60 cases, 1 was sixty-five, 1 sixty-three, 10 were between fifty and fifty-two, 1 was eighteen; only 3 were between twenty and thirty, while 44 were between thirty and fifty years of age.

The treatment of these cases may be by drugs or by surgery, or by both, or by letting alone. The most common drug used is ergot. Alone, as a rule, it is ineffectual; combined with curetting, it helps to stop hemorrhage. The treatment by high doses of electricity sent through the uterus and tumor *à la* Apostoli, I have written upon at length elsewhere.[1] Suffice it to say that it sometimes arrests hemorrhage, almost always relieves pain and gives strength, but rarely diminishes the size of the tumor.

[1] Boston Medical and Surgical Journal, vol. cxxiv, March 5, 1891.

Removal of the ovaries for the cure of fibroids, particularly bleeding ones, was at one time extensively practised. I have practised it but four times. In one woman, forty-four years old, the tumor disappeared in a few weeks, and menstruation ceased at once. In another, thirty-three years old, the catamenia gradually ceased after three years, and the tumor remained about the same when I last heard, in 1887. In another woman, thirty-four years old, the operation was done on August 5, 1885. By May, 1886, she had gained twenty-four pounds in weight, and was well and strong. From the time of the operation until November 10, 1885, a period of three months, she flowed incessantly, but slightly, nothing in amount to what she had done before the removal of the ovaries and tubes. From November 10, 1885, until February 24, 1886, the flow wholly ceased. Since the latter date until May 13, 1886, she flowed continually, but not one-tenth as much as she used to. The tumor was somewhat diminished. I have not seen her for six years. Another, thirty-six years old, was not at all relieved by the operation. The tumor reached to the umbilicus, and the flooding was severe. I removed the ovaries and the tubes on January 21, 1886. Two years later the tumor had descended into the cavity of the uterus, and was removed *per vaginam*. Of course, after this the hemorrhage ceased. In another case, not my own, I have seen the tumor grow enormously after removal of the appendages, and I am inclined to regard the method as unreliable.

Curetting the interior of the uterus often cures hemorrhage completely, and this curetting I follow by wiping the interior of the uterus with tincture of iodine. At the present time the surgical treatment is almost wholly by removal of the tumor, with or without the uterus. The kind of operation to be adopted has varied, and will vary with the particular case and the particular operator. In general, the two varieties of the operation are described as intra-peritoneal and extra-peritoneal treatment of the pedicle.

Of course, if the tumor has been gradually extruded more or less into the cavity of the uterus, it should be enucleated and removed under the most careful antisepsis. Such protrusion will invariably be preceded by great hemorrhage, and will give abundant warning of the necessity of interference. Quite large tumors are extruded in this way.

Tumors that have carried the fundus of the uterus to the umbilicus may occasionally, in the course of two or three years, descend into the cavity of the uterus, and be removed *per vaginam*. But tumors requiring removal, which do not thus become extruded, must be removed by abdominal section. There are several ways of finishing this operation. Sometimes one can close the wound in the uterus

by stitches and leave no pedicle, but simply a sutured wound, and then close the abdominal wound. Sometimes the base of the tumor and the body or neck of the uterus are compressed by a small écraseur or serre-nœud, and a long pin, passed through the stump, holds it outside the skin of the abdomen; this is called the extra-peritoneal treatment of the pedicle by Kœberlé's serre-nœud, or some modification of that instrument. Sometimes the stump is simply tied around as the pedicle of an ovarian tumor is, and is dropped back. Sometimes the stump is turned into the vagina after being ligated; this is called the intra-vaginal treatment of the stump, and is, of course, extra-peritoneal.

All the different modes of treatment depend for their fundamental success on asepsis, and on securing the vessels of the broad ligament, no matter in what way the pedicle or body or neck of the uterus is ultimately disposed of. I will not enumerate the different methods. The members of the Association are referred to the ingenious methods of operation described in the *American Journal of Obstetrics*, particularly in the contributions from Chicago during the past few years, and to the foreign journals, particularly the German ones.

The condition of most of those from whom fibroid tumors have been successfully removed by laparotomy is very comfortable. Some of them—I do not know exactly what proportion—suffer from what they call "hot flashes," by which they mean a sensation of heat rushing to their heads. This is extremely uncomfortable. In some cases it takes place every few minutes, in others at longer intervals. I do not know any way of relieving this distressing symptom. Others get extremely fat. A certain proportion, particularly those in whom the pedicle has been treated extra-peritoneally, suffer from ventral hernia. In all cases, however, in which the operation was really necessary the state of health is much improved, and the individual is very comfortable.

Sometimes the bladder is cut off by the wire écraseur, owing to its not having been sufficiently dissected off from the tumor; but in the only case of the kind occurring to me, the injury healed in a few weeks by keeping the bladder drained by means of a Sims's catheter, and the accident has caused no subsequent trouble, the bladder having remained perfectly normal since the operation, some ten years ago.

The length of an incision does not complicate an operation, provided there are no adhesions. I remember one extending from the sternum to the pubes, in which a tumor weighing fifty-three pounds was removed. The scar remained sound, and there is no hernia.

Very rarely, insanity follows the operation of removing a fibroid by laparotomy, as it sometimes does other surgical operations. Attacks of insanity that I have seen after surgical operations—such as ovariotomy, for instance—come on with normal temperature when recovery is taking place, and the insanity becomes more fixed and established as convalescence merges into health. One of my patients was an elderly person, sixty-eight years old, who recovered rapidly from ovariotomy; another was much younger, being only twenty-five years old. I have never seen insanity after hysterectomy.

I have seen tetanus twice in cases of other operators, but have never myself had an instance of it after hysterectomy. I have, however, had one case after an ovariotomy.

I invariably see that my patients that have recovered from abdominal hysterectomy are fitted with a firm abdominal supporter, and impress upon them the necessity of being careful about carrying heavy loads or straining themselves.

CATARRHAL GASTRITIS.[1]

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IN examining an old work published at the beginning of this century, giving an analysis of the admissions to the dispensary of Plymouth, England, I was struck by the nosologic entities that have disappeared from the average statistical table in the last ninety years. Among others, the general term febris has given place to a better nomenclature of the pyretic diseases. Anasarca has been succeeded by terms that reflect a better understanding of the protean conditions that underlie this symptom-group. Atrophia, convulsio and palpitatio have shared a like fate. The term dyspepsia, however, seems to occupy the same place in our nomenclature that it filled at the beginning of the century. The cause of this is to be found in the obscurity that has until recently surrounded the organic and functional disorders of the stomach. Of late, an immense gain has been made in our knowledge of the diseases of this viscus, notably in the increased precision attending the examination of the stomach-contents. It would seem as if the time had now arrived for discarding the term dyspepsia altogether as a pathologic entity and of relegating it to the limbo of broad symptom-groups occupied by such terms as heart-disease, paralysis, and deafness.

W. H. Flint, in his excellent article on the disorders of the stomach in the *Reference Handbook of the Medical Sciences*, does not use the term. It is true that so able a clinician as Dujardin-Beaumetz, as late as 1886, insisted upon retaining the designa-

[1] Read at the meeting of the American Medical Association, Section of Medicine, held in Detroit, June 7, 8, 9, and 10, 1892.

tion, though he significantly referred to the fact that his pituitous dyspepsia is called by the Germans catarrh of the stomach. Dyspepsia, too, remains a convenient term for the manufacturers of certain digestive ferments who advertise their wares as useful in dyspepsia, overlooking that by so doing they are as unphilosophic and unscientific as they would be in exploiting a remedy for the cure of blindness, paralysis, or fits.

The term dyspepsia is proper when it is used to express a condition, just as debility and nervousness are used, but the former is in no sense a diagnosis more than is the latter.

The American people are said to be a nation of dyspeptics, and by all odds the most frequent form of stomach-trouble presented by them is the simple chronic catarrhal gastritis. By this term is meant a slight degree of inflammation of the mucous lining of the organ, which in the mildest cases does not present any appreciable structural change. It is invariably accompanied by an over-production of mucus and an impairment of the digestive power, though fairly good digestion is compatible with the lighter forms of the disease.

Catarrhal gastritis is an affection frequently found associated with or complicating other disorders, both acute and chronic. On looking over my case-books for some years, I find that a diagnosis of chronic catarrhal gastritis has been made 118 times. Carefully examining these records, I find that there are only 17 cases in which the disease can be considered primary; that is to say, excluding all cases in which the disease was associated with heart and lung diseases, liver and renal disorders, rheumatism, anemia, and neurasthenia. So intimate is the relation between the condition last named and catarrhal gastritis that Bartholow regarded neurasthenia as but an effect of the digestive trouble, claiming that there was no symptom belonging to the category of neurasthenia that may not be due to purely reflex causes having their origin in the digestive tube. This view, while it is not to be accepted in its extreme application, has a certain basis of fact in that a large number of neurasthenics present more or less disturbance of the digestive tract, and very commonly the clinical picture of catarrhal gastritis. Still, the broad deduction cannot be made, because we meet with cases of neurasthenia without gastric disturbance, and again with catarrhal gastritis that has existed for years without the patient presenting any of the symptoms of neurasthenia.

Of the 17 cases in which we could exclude all complicating disorders and the grosser structural alterations, such as ulcer, tumors, and dilatation, the symptomatology was briefly as follows: In 12 cases, the tongue was heavily coated; in 3, slightly coated; and in 2 it was clean. Constipation was present in 11 cases. Pain in the epigastrium, both on pressure and after eating, was present in all cases. In 8 there was a sense of swelling or fulness in the epigastrium. Seven cases complained of nausea alone; this was usually worse after meals; the remainder had vomiting. Nine had eructations of gas. The appetite was fair in 6 cases, in 5 it was good, and in 6 it was poor.

The foregoing constitutes the clinical picture of chronic catarrhal gastritis, one of the most frequent disorders that the physician is called upon to treat. The most constant signs are the pain in the epigastrium and the nausea and vomiting, the coated tongue, constipation, and loss of appetite being by no means so regularly present.

The etiology of these cases was not so readily ascertained. The preponderance of the male sex was shown in that 13 of the 17 cases were men. The chief cause was the abuse of alcoholics, both in fermented and distilled liquors. The practice of dram-taking just before meals seemed to excercise an especially deleterious influence. There was a history of excessive use of tobacco in several instances, but no case was uncomplicated by the liquor-habit. The ingestion of iced liquids, either before or with meals, seemed to be an exciting cause in four cases. Two of these patients used large quantities of tea. In more than half of the cases the etiology was mixed, and in many no definite cause could be ascertained. These latter, however, all belonged to the dispensary patients, and it is probable that poor and improperly prepared food had much to do with the condition. In no single instance could the disease be traced to pre-existing acute or subacute gastritis. The disorder invariably came on gradually, with periods of amelioration, to be followed by relapses, the symptoms gradually becoming worse until the patients consulted a physician. The duration of the disease varied from several months to many years.

The necessity for washing out the stomach in these catarrhal inflammations has been dinned into our ears for some years. Scarcely a recent text-book can be consulted that does not recommend lavage of the stomach as the remedy *par excellence* in catarrhal gastritis. I have no issue to take with this statement; lavage is one of the best means at our command; but notwithstanding continued reiteration, the method does not seem to have become at all popular or to have met with extended application. The reason is not far to seek. The procedure requires a somewhat cumbersome apparatus and the necessity of teaching the patient how to use it. I do not know what the experience of others has been, but my own successes in this direction have not been brilliant. Occasionally a patient can be taught to use the tube, and if he will persist he

soon comes to like the treatment. As a rule, patients object when the subject is first mentioned, and if they try the method the generally unpleasant effects of the first one or two introductions is sufficient to send them in search of a physician who employs a less disagreeable treatment. The result has been that the profession has generally adhered to the old-time prescription of bismuth with pepsin, and sometimes a bitter tonic. If any directions are given regarding diet, it is generally no more specific than that he is "to be careful with his diet," or "to eat light food." It is needless to say that these methods are as unphysiologic and unscientific as they are unsuccessful. Patients in this way drift about from one physician to another, until it is not an uncommon experience for them to enter one's office, and after detailing their sufferings, tell you that you need not give them pepsin, bismuth, syrup of the hypophosphites, or beef, wine and iron, as they have had all these.

In catarrhal gastritis the stomach secretes an excessive quantity of mucus. As soon as the food is ingested it is at once coated and prevented from coming in contact with the stomach-wall. The result is that the stomach is not supplied with its normal stimulus, and both the secretion and movements of the organ are lessened. What secretion there is cannot readily reach the food; in consequence, in the absence of the antiseptic power of the gastric juice, the food ferments, gases are formed, and vomiting takes place. The prolonged retention of food and the irritation react to increase the inflammation and congestion of the organ. This morbid cycle, once set up, perpetuates itself with ever-increasing intensity.

The plan employed in treating the seventeen cases that form the basis of this paper consisted in the administration of hot alkaline water before each meal. Sodium bicarbonate is added to the water in the proportion of ten grains to the pint. Of this solution eight, twelve, or even sixteen ounces, according to the severity of the case, are administered at least twenty minutes before each meal. The water should be as hot as can comfortably be borne, and should be taken slowly. By this means the stomach is effectually cleared of its contained mucus, and is prepared for the reception of food. This should consist of a test-meal of from four to six ounces of steak, preferably broiled, with from two to four ounces of bread, thinly buttered. From this starting-point the diet should be increased or decreased as the patient does or does not suffer from nausea or vomiting. The central idea of the diet in these cases is to restrict it largely to proteids, such as lean meats, oysters, and eggs, together with a small quantity of bread. All starches and fats should be excluded, excepting the small quantity contained in the thinly buttered bread. This is a matter of importance because of the readiness with which starches and fats undergo decomposition when gastric digestion is delayed. When the quantity of food that the incompetent organ will digest without leaving a residuum for fermentation has been ascertained, it should be held for a few days at that point and then gradually increased. As the inflammatory condition subsides, the organ gains strength, and the diet may be increased and made to include a greater variety of food. It is doubtful if anyone who has ever had a chronic gastritis should be allowed to eat mince-pies, tarts, plum-puddings, or other culinary abominations. Bismuth, cerium oxalate, nux vomica, and the bitter tonics are useful adjuvants in treatment.

I do not think that pepsin is of any value in the treatment of chronic catarrhal gastritis. I do not wish to be understood as decrying the value of pepsin in certain stomach disorders, notably those attended by atrophy of the gastric tubules, or other structural alterations. Pepsin is also useful in the cases of catarrhal gastritis dependent upon anemia, nephritis, and other disorders in which the primary trouble is due to failure of gastric secretion from a deficient or poor blood-supply. In these cases the agent may prove invaluable, but, in my judgment, the dose usually employed is much too small. It is in the uncomplicated inflammations that I regard pepsin as valueless; the indigestion is dependent on an entirely different set of conditions.

Relapses are exceedingly common; in fact, they occurred in every one of my cases. They are to be met by a return to the treatment, if it has been suspended, or to a stricter and lessened quantity of food. In the course of the treatment the relapses will occur less frequently; they will be less severe, and will yield more readily to the remedies employed.

The results in the seventeen cases were excellent: eight of them recovered, remaining well at least six months after suspending treatment. Of the remaining nine cases, all were improved, and some of them could be considered recovered, as they passed from under observation completely relieved, but I had no opportunity of learning their condition some months after suspending treatment. In no case was the treatment persisted in for some weeks without marked improvement being noted.

In conclusion, allow me to say that the method of treatment here outlined is of little or no value in cases of tumor, stricture, atrophy of the gastric tubules, or other gross alteration in the structure of the stomach, or when there is marked dilatation. In cases complicated by heart, lung, kidney, or liver diseases, or by anemia and neurasthenia, the method may be a useful adjunct, but we can hardly expect

a cure. It is claimed that it meets the indications in simple catarrhal gastritis quite as well as lavage, that it is much less trying to the patient, that it is adapted to the poorer classes and to dispensary patients, who in many instances are unable to afford even the small expense of a stomach-tube.

ORIGINAL ADDRESSES.

SURGERY OF THE GALL-BLADDER AND DUCTS.

BY J. McFADDEN GASTON, M.D.,
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Abridged Address of the Chairman of the Section of Surgery and Anatomy of the American Medical Association, delivered at Detroit, June 7, 1892.

IN regard to the procedures heretofore adopted, I would refer those who may be interested to my article in *Gaillard's Journal*, October, 1884, also to the reports of my experimental work in the *Atlanta Medical and Surgical Journal* for September and October, 1884, and September and November, 1885. A complete *résumé* of this subject was made in my contributions to the second volume of the *Reference Handbook*, in 1886, under the headings of Cholecystectomy, Cholecystotomy, and Duodeno-cholecystostomy. My paper on "The Surgical Relations of the Gall-bladder to Obstruction of the Ducts," will be found in the *Transactions of the Medical Association of Georgia* for 1886. A contribution to the British Medical Association at Brighton, in 1886, "On the Practicability of Establishing an Artificial Fistulous Opening, in the Human Subject, between the Gall-bladder and the Duodenum," appeared in the *British Medical Journal*. These publications included the data presented by others up to the time of their presentation; and have doubtless had their share of influence upon the subsequent treatment of this class of cases.

The increasing interest exhibited by surgeons in the serious consequences resulting from any obstruction to the flow of bile from the liver, has been characterized by greater activity in affording surgical relief for these troubles. Various operative measures touching the gall-bladder and ducts, with crushing of gall-stones, have brought about a revolution not only in the theoretic views of surgeons, but in their surgical appliances. A new era has dawned upon gall-bladder surgery, and old things are passing away, to be consigned to the sea of oblivion.

While the operation of natural cholecystotomy has been done, in a large number of cases, by different surgeons, there has been no material improvement in its technique or in its final benefit to the patient.

The organic changes to which cholecystectomy is usually thought to be best adapted have not been encountered so often as to require this measure in many cases; yet the good results in a large proportion of the operations reported warrant its adoption under certain conditions, and I have suggested that in excising the gall-bladder its upper wall should be left adherent to the liver.

Incision and suture of the wall of the common bile-duct for the removal of gall-stones have been practised in twelve cases, with only one fatal result from the operation. Three of the cases have been operated on by Courvoisier, and one by each of the following named: Kummell, Heusner, Kuster, Rehn, Braun, Frank, Hochenegg, Marcy, and Vander Veer.

The development of the possibilities of benefit from the anastomosis of the gall-bladder and the common bile-duct with the duodenum and other divisions of the intestinal canal has lately occupied the earnest attention of surgeons. When the natural outlet for the bile becomes obstructed, it is recognized as proper to effect an artificial passage for it into the intestine. A new departure in operative measures consists in connecting the walls of the common duct with the duodenum, as was done in a case reported in the *Deutsche medicinische Wochenschrift*, September 3, 1891.

A woman, forty years old, suffered from the usual concomitants of biliary obstruction. After the abdomen was opened, the cystic duct was mistaken for the common duct, and the latter for the duodenum. A stone found in the first was pressed into the distended common duct, and the passage was supposed to be free; but in a subsequent operation, a stone was found in the cystic duct and a second at the portal channel; the second stone was crushed. The common duct filled immediately with bile, and in order to provide an outlet it became necessary to connect the walls of the duct and of the duodenum, by incising each and bringing them together with stitches. In doing this, some bile necessarily flowed into the wound, but no serious disturbance followed. Three months afterward the patient had recovered from all trouble, and it is to be inferred that the communication between the common duct and the duodenum was maintained.

A modification of cholecystotomy, proposed by Wölfler, has been adopted in a few cases, in which all abnormal accumulations are removed from the sac, and the ducts are freed of any concretions, with a fair prospect of the full restoration of their functions. The incision in the wall of the gall-bladder is closed, and then attached by sutures to the parietal incision. It is provided in this operation that when the union of the incised wall of the gall-bladder shall be completed, a separation of the attachment to the external parietes shall be effected, so as to allow the gall-bladder to be free. This process is based upon a doubt as to the efficiency of suturing the tissues of the sac; and in case of any yielding of the stitches, to favor the escape of the bile through the parietal wound, instead of into the peritoneum. While the presence of freshly produced bile is not proved to be productive of serious results, this procedure implies an abundance of caution against the contingency of failure in suturing the sac.

In the ordinary process of attaching the incised wall of the gall-bladder to an opening in the abdomen, styled natural cholecystotomy, with a view of providing an outlet for the bile, there is no provision for utilizing this discharge from the liver. When the ducts are patulous, leading into the gall-bladder and into the duodenum, the process of ideal cholecystotomy by emptying the contents of the gall-bladder and closing the incision of the walls, dropping this viscus into the abdomen, has been attended with satisfactory results, and a successful case has recently been reported by Hardon.

It would appear, however, that all cases of obstruc-

tion of the cystic and common ducts by gall-stones, call for their dislodgement by one or another procedure, to afford an outlet for the bile; and that the attachment of the incision in the gall-bladder to the opening in the wall of the abdomen, leading to a discharge of the bile externally, should be regarded as a mere temporary recourse. In the event of failure to effect an outlet for the bile through the common duct, cholecystenterostomy is clearly indicated.

As to the portion of the intestine that should be selected for the attachment of the gall-bladder or the ductus choledochus, we have a definite guide in the entrance of the bile naturally into the duodenum; and the nearer to this point that an anastomosis can be effected, the better the result that may be expected. The relations of the duodenum and jejunum to the gall-bladder are ordinarily such as to facilitate their union, and I have given the preference to the duodenum from physiologic considerations as well as from surgical convenience, while objecting to the colon.

It is, of course, presumed that there is such an occlusion of the common bile-duct as to prove irremediable by other means, before proceeding with an operation to effect an outlet for the bile by uniting the gall-bladder with the intestinal canal. A misunderstanding of this condition has led to misapprehension of the end to be attained by duodeno-cholecystostomy or cholecystenterostomy, and, once for all, let me say that it is only warranted by occlusion of the common duct. While each of the several operations may be indicated in special cases, the present outlook of anastomotic procedures for conveying the bile from the liver into the intestinal canal in case of obstruction of the common duct is entitled to precedence in gall-bladder surgery.

All of our resources being exhausted without relief to the impediment for the discharge of bile through the ductus choledochus, and finding the integrity of the gall-bladder favorable for its attachment to some portion of the intestine, we may rest assured that we shall be able to effect an opening from the former into the latter by which the bile shall subserve its legitimate purpose in the animal economy.

The various procedures adopted by Golzi, Page, and myself in our experiments upon dogs were undertaken with a view to guide others in the performance of operations upon the human being. This work must hold a place similar to that of pioneers who have gone forth to blaze out the paths in an unexplored region and have set up danger-signals to caution the unwary traveller that may come after them in the search for a route that shall lead to the goal of his expectations. Some quagmires and quicksands were encountered by us that may be avoided by others. All must allow that the fruit of our experience has thrown much light upon the intestinal labyrinth in which we groped without a guide to direct us at that period.

My efforts were directed at the outset mainly to the establishment of a fistulous communication between the gall-bladder and the duodenum by means of an elastic ligature passed through their approximated walls. This was surrounded with a circular or an oval continuous suture of catgut, so as to effect the immediate adhesion of the serous surfaces; but it was subsequently found that a single stitch of silk thread united the surfaces and ultimately cut its way through the two approximated walls so as to effect a communication between the gall-bladder and the duodenum.

The difficulties encountered in ligating the common bile-duct subsequently were the greatest obstacles to the final success of this operation, and would not be encountered in case of preëxisting occlusion, which is the condition demanding operation in the human subject.

These and other experiments, undertaken upon twenty-one dogs, are illustrated in the cuts accompanying my paper laid before the British Medical Association. It may be stated, however, that my conception of the procedures indicated were not limited to the means employed in these experiments, and it was distinctly set forth that some other process might be found preferable, and it rests with surgeons to adopt that which proves best.

A number of operations have been referred to by Ross, as undertaken by different surgeons, with a view of securing the results aimed at; and I cannot perform a more profitable service to the profession than to present some of the details, gathered from various sources.

To Nussbaum is attributed the first suggestion of relieving the occlusion of the common bile-duct by conveying the bile into the intestinal canal through artificial openings in the adherent walls of the gall-bladder and the intestine; but the credit of having first accomplished this result upon the human being is undoubtedly due to Von Winiwarter; and it affords me the greatest satisfaction to award him the honor of priority in the execution of cholecystenterostomy.

We are informed that between the 20th of July, 1880, and the 14th of November, 1881, he treated for sixteen months a man, aged thirty-four years, who suffered from obstruction of the common bile-duct, and who was subjected to six different operations for the formation of a fistula between the gall-bladder and the colon.

All kinds of difficulties thwarted this undertaking, but it is claimed that the surgeon eventually succeeded in attaching the gall-bladder to a coil of the small intestine, and effecting a fistulous communication, by which the bile escaped into the intestinal canal, thus obviating the inconveniences of an external outlet.

After a lapse of six years, during which the various experiments on dogs by Golzi, Page, and myself, were performed, Monastyrski united the gall-bladder with the jejunum, on the 4th of June, 1887. He incised the abdominal wall, punctured the gall-bladder, incised its walls and those of the jejunum, and sutured the edges with catgut. A fistulous communication was secured two meters below the duodenum, but death ensued ultimately from carcinoma of the head of the pancreas, as verified by the autopsy.

The operation of Kappeler came next in the order of time, being done on the 6th of July, 1887, by uniting the gall-bladder with the ileum by Wölfler's suture. The patient progressed favorably for a time, and returned to work, but eventually died on September 9, 1888, fifteen months after the operation. The autopsy showed that a fistula had been established about eight feet from the ileocecal valve, and that its intestinal orifice was provided with a valve that allowed the contents of the gall-bladder to pass into the intestine, but prevented the passage of intestinal contents into the gall-bladder. Doubtless a similar provision exists in all such cases.

In the year following the operation of Kappeler, Fritsche established a fistulous opening from the gall-bladder into the jejunum, three meters below the pylorus. At the post-mortem examination a carcinoma of the size of a walnut was found at the mouth of the common bile-duct. Socin and Bardenheuer each attached the gall-bladder to a loop of the small intestine. The case of the latter died in the fourth week, and no fistula was found. It is said that the operation was done with elastic ligatures.

On March 2, 1889, Robson operated upon a patient that had previously been subjected to cholecystotomy, when the ducts were found, and the gall-bladder was attached to the abdominal wall by firm adhesions. The common duct subsequently becoming occluded, an incision was made through the scar from the former operation, in the semilunar line, and it was found that the attachment of the gall-bladder could only be effected with the colon. Both were incised, and united with chromic catgut in two rows. The former external fistula was closed by suture, and a drainage-tube was inserted in the wound. After one day, bile came out of the drainage-tube, and also fecal matter from the intestinal wound. In spite of this complication, a speedy recovery, with the appearance of bilious matter in the feces, is reported.

On July 13, 1889, Terrier performed an operation for the relief of occlusion of the common duct. An incision was made in the median line above the navel. The gall-bladder was punctured and the contents evacuated. Upon incising its walls and exploring its cavity no stones were found and the cystic duct was open. In the oblong enlargement of the common duct was impacted a gall-stone which could not be removed. After attaching the gall-bladder to the duodenum by a circular or oblong row of catgut sutures and before tying the last stitches, the walls of both were incised and a rubber drainage-tube was introduced, so as to pass from the cavity of the gall-bladder into the duodenum. The fundus of the gall-bladder was sutured to the lower angle of the external incision, which was then closed by catgut sutures. There was fever until August 1st, but the itching and jaundice gradually disappeared. The drainage-tube passed off with the evacuations nine days after the operation, and the stools gave evidence of the presence of bile. The external wound healed by first intention. The patient was dismissed on August 10th in ordinary health.

This patient died in the spring of 1890 from influenza and no gall-stone was found in the common bile-duct.

Courvoisier, in like manner with Robson, performed the operation of natural cholecystotomy upon a patient, without obtaining a satisfactory result. After the lapse of a year, complications arose that demanded the performance of cholecystenterostomy, and this was done on the 28th of March, 1890. An incision was made through the abdominal wall, below the ribs, along the border of the liver. The gall-bladder was detached from the abdominal wall, and after incising the sac, the gall-stone was removed from the common duct and others scooped from the hepatic ducts.

An incision into the lower surface of the gall-bladder was united to the colon by an oval row of catgut sutures, and before putting in the last stitches the wall of the colon was incised. The fistulous parts of the gall-bladder were cut away and the edges stitched. Two drainage-tubes were inserted and the external wound was closed around them. There was no fever after April 2d. Bile was found on the dressings, but its source was not determined. Bile appeared in the stools on the 6th of April, and on the 8th the drainage-tubes were removed and the external wound was sutured. On the 15th of April the patient was free from jaundice and got up feeling very well. The case was dismissed about the middle of May, and in the middle of July her condition was excellent. There was no more colic or jaundice.

Courvoisier thus sums up the result of these seven cases. One case operated upon died, as a consequence of a complication which should not be charged to the method. All the others recovered from the operations, but in four of the cases the carcinomatous condition of the pancreas caused death at a later period. A definite final cure is claimed only in the cases of Robson and Courvoisier, in which, it will be remembered, the gall-bladder was attached to the colon, not by choice but from necessity.

The practicability of effecting an outlet from the gall-bladder into the intestinal canal can no longer be doubted, and in the view of Courvoisier it stands more and more securely as the details from trustworthy sources become more widely disseminated.

The indications for the operation are formulated by him as follows:

(*a*) When biliary fistulæ are difficult of removal, whether traumatic, ulcerative, or operative.

(*b*) In permanent obstruction of the common bile-duct (except in cases of gall-stones).

(*c*) In traumatic and ulcerative communications between the common duct and the abdominal wall.

Operation is contra-indicated:

1. When the patients have grown very feeble, in which cases provisional cholecystostomy might be performed.

2. When the common duct is obstructed by gall-stones, in which cases cholelithotomy, with stitching or lithotripsy, is indicated.

A case of cholecystenterostomy has been reported by Helferich, in the *Deutsche medicinische Wochenschrift*, February 25, 1892, for the details of which I am indebted to Dr. P. J. Rosenheim, of New York.

The patient, a man aged thirty-nine, had suffered periodically from pains in the stomach since 1885, and developed jaundice in April, 1891. During the following month he had attacks of biliary colic, recurring every fortnight, the jaundice being more marked after every attack. It was thought that the common duct was obstructed by calculi, and an operation for their removal was undertaken in November. An incision was made midway between the lower border of the ribs and the border of the enlarged liver, extending vertically in the linea alba to the ensiform cartilage. After the liver had been retracted, the gall-bladder came into view; it contained no calculi, but an examination disclosed a number of calculi in the common bile-duct, which it was found impracticable to remove. An opening was therefore made in the gall-bladder and another in the first part of the jejunum, and a communication was established between these viscera by suturing the

corresponding margins of the apertures. The fistula thus formed was of the caliber of a lead-pencil. The patient made a rapid recovery, the symptoms of jaundice having disappeared. During the following January he experienced two light attacks of fever, without any jaundice, attributed to calculi in the common bile-duct. As a means of affording palliation of his sufferings, the operation was a success.

Chavasse has reported in the *Lancet* an interesting case in which an anastomosis between the gall-bladder and the colon was effected by a process differing materially from the previous operations. A man, forty-eight years old, had undergone chelocystotomy for the relief of jaundice, dependent upon biliary obstruction by calculi, which was followed by the persistence of a biliary fistula. Other measures failing, with the aid of Senn's bone-plates a communication was established between the gall-bladder and the colon at its hepatic flexure. At first, bile and fecal matter were discharged through the abdominal wound, but ultimately this closed, the stools were passed naturally, and the general condition of the patient was much improved.

Korte also reports a successful case of the union of the gall-bladder with the duodenum, after the manner of Terrier, thus affording two favorable results from duodeno-cholecystotomy.

So far as the operations are to be considered, those of Kappeler and Terrier were successes, and being added to the other six cases with finally good results, we have eight cures of twelve in which the operation of cholecyst-enterostomy has been successfully performed, being a mortality of only 25 per cent. from the operations.

This encourages the expectations with improved methods of obtaining a satisfactory solution of the problem of relief for occlusion of the common bile-duct. While other means may be employed for correcting temporary obstructions of the ducts, the great desideratum in occlusion of the common duct is to provide an artificial opening from the gall-bladder or duct into the duodenum or the adjacent portion of the intestinal canal.

SOME MOOTED POINTS IN OBSTETRICS AND GYNECOLOGY.[1]

BY E. E. MONTGOMERY, M.D.,
OF PHILADELPHIA.

GENTLEMEN: In considering a subject for an address to this body, I felt I could more profitably employ your time by discussing some of the mooted points in obstetrics and gynecology, than by the presentation of a paper upon any special subject.

It is true that some of the subjects I have chosen may seem trite, but it cannot be said that they are unimportant, and unworthy of careful consideration.

It is with hesitancy that I consider some, for the reason that they will be more extensively and ably discussed in papers that are listed for your appreciation.

Cæsarean Section versus Craniotomy.—Under cruder methods of procedure a comparatively low valuation was placed upon intra-uterine life. We need but to review the statistics of the earlier British obstetricians to see in how much larger ratio the life of the child was sacrificed than resort was made to the use of the forceps. As this instrument was more frequently used, the number of instances in which it was found necessary to destroy the child was greatly diminished. With the knowledge secured through the practice of antiseptic measures, the term of human life has been lengthened and the importance of the unborn individual has obtained a higher appreciation. The obstetrician more and more recognizes that in every case of labor there are two individuals to be considered, each of whom must be afforded a chance for life.

In view of the safety of the induction of premature labor, of the decreased mortality of the modified Cæsarean and Porro operations, it has become a serious question in the minds of many of our best practitioners, whether the living child should ever be subjected to embryotomy.

It is a source of continual opprobrium to our profession that we must sacrifice life to save it. With the reduced mortality of the Cæsarean procedure experienced by Zweifel (one in eighteen), it no longer seems just that the life of one of the interested individuals should be destroyed. The responsibility of parentage, the obligation to the unborn, both of physician and patient, should have a higher standard of appreciation. We would urge that craniotomy in obstructions of the pelvis be elected only when, first, the child is certainly dead and its delivery unmutilated would endanger the vitality of the maternal tissues; second, after repeated mechanical efforts to deliver the child still living, and the physical signs demonstrating that the child is too feeble to long survive its birth; the maternal peril should not be increased, or comfort lessened, when it is evident that the child has no chance of surviving; third, the existence of hydrocephalus or other irremediable disease in the fetus.

The choice between the Cæsarean and Porro operations has been much discussed. The advocates of the latter procedure claim that it lessens the danger, by the removal of the large absorbing surface of the uterine body, obviates the escape into the abdomen of fluid from the uterus, and saves the patient from subsequent recurrence of pregnancy. Its opponents reply that an operation properly performed, should leave the cavity in as good condition as after an ordinary labor; the uterus, carefully sutured, quickly unites, rendering leakage into the abdomen extremely improbable.

The prevention of subsequent pregnancy is not always desirable, even in rhachitic patients, as it has been recognized that their defects have no special influence upon the health of their offspring.

The danger in secondary Cæsarean operations is greatly lessened.

The statistics collected by Harris have demonstrated that this operation has not been attended with results as favorable as those of the modified Cæsarean. It is indicated in the presence of large fibroid growths, or if the patient has been long in labor, and the uterus has become bruised and partially devitalized, or in the presence of beginning sepsis.

Placenta Previa.—There is probably no condition that has given greater anxiety or has been the subject of

[1] The President's Address, read at the opening of the meeting of the Section of Obstetrics and Diseases of Women, American Medical Association, Detroit, June 7, 1892.

more varied discussion than the attachment of the placenta in the lower segment of the uterus. When we consider the danger to the individual arising from the progress of such a condition, it seems unwise to permit her to be subjected to it, if there be any possible means to avoid it. If it has been demonstrated that the placenta occupies the position known as centralis, what possible advantage can be urged in permitting the patient to go on almost to full term, with a possibility of recurring hemorrhages, any one of which may prove fatal before a physician can be secured. In such cases it is very rare for the child to be delivered alive, and consequently, with the slight possibility of its being saved, the life of the woman should not be imperilled.

The better plan of treatment would seem to be that urged by Wyder. Secure dilatation of the uterus sufficient to permit of version by the Braxton-Hicks method, then drag the limbs into the cervix; these will act as a natural tampon and prevent further hemorrhage.

I was called some time ago to see a woman—the wife of a physician—in Lock Haven, Pa. I arrived at 8 A.M., and found that she had been suffering from repeated attacks of hemorrhage. Placenta previa had been suspected; the uterus was dilated sufficiently to permit the introduction of one finger; this was followed by a second, forcibly dilating the uterus until the two fingers were in its cavity, then the membranes were ruptured, and by external manipulation, one leg of the child was brought in contact with the internal fingers, and drawn into the cervix. By moderate traction the uterus was dilated, and the fetus delivered; the placenta was removed, uterine contractions secured, and the vagina and uterus irrigated, the entire maneuver being completed in less than three hours. This patient had previously had two or three hemorrhages, which had led to fears of her inability to recover therefrom. She was exceedingly weak and debilitated. The child was stillborn; the mother recovered without any untoward symptoms.

According to Wyder, the maternal mortality under the old plan of treatment reached from 30 to 40 per cent., while the statistics of the clinics of Schröder and Gusserow, in which the plan of treatment just considered was followed, the percentage of mortality was from 6 to 7 per cent. The infantile mortality under the old methods was from 50 to 70 per cent. Under the new it is but slightly more, being but from 70 to 80 per cent., and this mortality is of course compensated by the greatly reduced maternal loss. In addition to the advantage of relieving the patient and physician of every anxiety, it also decreases the danger to the patient from sepsis during the subsequent convalescence.

Sepsis.—The importance of early treatment of septic conditions cannot be too highly appreciated. When we consider the rapidity with which diseased conditions extend from the uterine mucous membrane to that of the tubes, and along the lymphatics, subsequently involving the ovaries and peritoneum, we cannot urge too strongly the necessity of prompt measures to arrest the progress of the disease while still within the uterus. Infection of the uterine cavity leads to rapid development of inflammatory changes in the mucous membrane and to arrest of normal processes. Multiplication of germs in the mucosa and repeated absorption of their products into the system, produce all the symptoms of septicemia. The usual course when elevation of temperature occurs is to proceed with frequent intra-uterine irrigation, thus endeavoring to obviate the unpleasant effects of the poison. The difficulty, however, in accomplishing this, or in rendering it thoroughly serviceable, is that we have the membrane of the uterus coated with considerable débris, which is only superficially affected by the germicidal irrigation. Consequently we would urge the necessity, not only of irrigation, but of thorough curetting of the cavity, scraping away the broken-down and infected tissue, either with the blunt curette, or with what is a still better instrument, the finger.

Having removed and loosened this tissue as thoroughly as possible, the intra-uterine syringe should be used, taking proper precautions to secure a free flow of the fluid from the organ. The irrigation may be practised by the use of a solution of acid sublimate or of hydrogen dioxide. When the former agent is used, it should be followed by irrigation with sterilized water, so that the superfluous material that might be absorbed and poison the patient, will be washed away.

The thick, flabby walls of the uterus, lying in contact with each other, lead to blocking up of the uterine secretion in the cavity of the organ, and thus promote the tendency to putrefactive changes. To avoid this, drainage should be secured. It may be done by introducing a rope of iodoform-gauze to the fundus of the uterus. This serves an excellent purpose: first, in keeping the walls apart; second, it acts as a drain, through its capillary action; and third, by its presence, as a foreign body, it stimulates the processes of involution. When the vagina and uterus have been thoroughly cleansed and prepared for its introduction, the twist of gauze may be left for from forty-eight to seventy-two hours. Its removal should be followed by careful irrigation and the reintroduction of gauze. In this way the size of the uterus may, in a short time, be reduced to the normal.

The serious effect of extension of inflammation from the uterus must impress on the obstetrician the great importance of early treatment. In several instances it has been my experience to have to consider the necessity of operative interference to save the life of the patient. In one instance repeated attacks of chills and fever, occurring weeks after the uterus had been curetted and irrigated, led to opening of the abdomen and removal of the ovaries. In one of these, a teaspoonful of stinking, greenish-yellow pus was found. The operation was followed by rapid subsidence of all inflammatory changes, and the recovery of the patient.

In another instance a mass was found in the left side of the uterus that proved to be a large pus-sac, after the removal of which the patient recovered.

A case was recently seen in the practice of Dr. Parish, of Philadelphia, in which an abscess had extended into the wall of the uterus. In this patient, one side of the uterus was cut away nearly to the cavity of the organ, and the walls sutured, bringing the peritoneum over the denuded surface, and the patient fully recovered. In the presence of such possible results, the patient should not be permitted to remain without attacking the disease in its original site of development.

Endometritis.—In acute or chronic inflammation of the non-pregnant uterus, it seems just as important that,

whenever possible, diseased conditions should be arrested while confined to the uterine cavity, and their extension to inflammation of the tubes prevented. The treatment in such diseased conditions becomes a serious question. How can we best remedy them, and what plan of procedure is least likely to be attended with inflammatory extension? When we find the uterine canal abraded of its ciliated columnar epithelium by the catarrhal processes, its glands stimulated to greater activity, and filled with viscid secretion, the mucous membrane of the uterus oftentimes covered with papillary masses, resembling polypi, the surface of the entire canal much resembling that of an ordinary sinus—it seems but prudent that, as early as possible, every precaution should be taken to correct the condition. Here, as in every other sinus, it is important to secure thorough and prompt drainage. After thorough aseptic precautions the proper plan of procedure would be the dilatation of the uterus, curetting of its cavity, washing it out with a disinfectant solution, and then the application of some means to secure drainage. This may be done either by the method of Polk, or that of Wylie and Boldt.

Polk packs the cavity of the uterus with iodoform-gauze, trusting to its influence on the mucous membrane to bring about more rapid activity of the uterine circulation, and consequent diminution in the size of the organ. The grooved stem-pessaries of Wylie and Boldt also increase the activity of the circulation, and promote drainage. These instruments may be worn for some length of time, and under their influence the uterus will undergo rapid involution.

Trendelenburg Posture.—In the various operations upon the pelvic organs, the majority of operators have followed the lead of the pioneers in this field, and placed the patient in the horizontal position. This posture of the patient has, however, been attended with a number of disadvantages: first, the difficulty of illuminating the pelvis, and being able to see into the deeper cavity, and thus secure bleeding-points. If the operator, having in many cases to depend upon touch to determine the condition of the broad ligament, should through any misfortune let the ligature slip, allowing a vessel to spurt, profuse hemorrhage can take place before he may be able to determine its origin. Second, the intestines, retained with difficulty, are very likely to be pushed out of the wound, and still further obscure the pelvic cavity. The posture known as the Trendelenburg, and which has been ably advocated in this country by Dr. Krug, of New York, aims to place the patient in a position in which the lower part of the pelvis is elevated at an angle of from 45 to 60 degrees. This done in front of a window, permits the light to fall directly into the pelvis, when the wound is held open, and at the same time causes the viscera to fall upward toward the diaphragm, preventing them from obscuring the vision. In this posture, the physician and attendants are enabled to look directly into the pelvis, and see the bladder and uterus, the appendages, the existence or non-existence of adhesions, and the relations of the pelvic and abdominal viscera. If coils of intestines are adherent, these points are seen, the enucleation can be accomplished under the eye, and the extent of the involvement can readily be recognized. If bleeding occurs during the procedure, it can also be seen, and the bleeding-points promptly secured. It has been objected to the plan, that there is greater danger of soiling the upper portion of the abdominal cavity with pus, but if the operator is careful in placing sponges around the pus-cavity, this can be entirely prevented. Indeed, the intestines can be pushed upward covered with sponges in such a way that there is no possibility of any soiling of the peritoneal cavity above the abscess itself.

The cavity thus being freed from contact with pus and blood, the field of operation directly under the view, there is not the same necessity for abdominal irrigation that there would be when an abscess-cavity is broken up, and pus flows upon the loops of the intestines and over the entire pelvis and its contents. The position is one that is of great advantage in every operation involving the removal of the uterine appendages. It is almost indispensable in those operations in which the entire uterus is removed through the abdomen.

Hysterectomy versus Supra-vaginal Hysterectomy for Fibroid Growths. — The extra-peritoneal treatment of the pedicle in the removal of fibroid tumors of the uterus has long been recognized as the most effective method of controlling hemorrhage from the stump. On account of the elastic character of the uterine tissue the majority of operators have hesitated to trust the ligature to control hemorrhage in these cases. The extra-peritoneal treatment of the stump, however, is attended with many disadvantages. Not infrequently the stump is necessarily a short one; the traction upon the vagina and the pressure against the bladder are marked and distressing; the size of the stump, filling up a large portion of the lower angle of the wound, necessarily produces a weakened ventrum; and the pressure of the pins upon the abdominal surfaces, resulting from the traction of the stump, not infrequently leads to ulceration. The retraction of the stump following removal of the serre-nœud produces a large cavity that must heal by granulation, thus delaying the convalescence of the patient. For this reason there has been a constant effort upon the part of the profession to avoid the necessity of extra-peritoneal treatment of the stump.

As we have already mentioned, the mortality of intra-peritoneal treatment has been disproportionately large. When we consider that the stump is of no special value, and can be so easily removed, it seems singular that it has been permitted to remain so long. To accomplish its removal, however, the better plan of procedure is that instituted by Krug, which consists in throwing about the stump an elastic ligature, or temporarily applying a clamp to the cervix, cutting off the tumor, and then opening into the vagina posteriorly, followed by the separation of the bladder anteriorly, until the vagina is reached, and the broad ligament ligated on each side, in sections.

To perform this portion of the operation, the Trendelenburg posture is of very great advantage. Krug ligates with silk, leaves his ligatures long and draws them out through the vagina, in this way inverting the edges. He depends upon drainage secured by packing the vagina and lower part of the abdomen from above with iodoform-gauze. This, at the end of a week, is withdrawn through the vagina. From this part of his procedure, however, I am inclined to dissent, preferring to ligate the broad ligaments with catgut ligatures, which

are to be cut short, and then following the procedure suggested by Reed—suture the peritoneum over the upper part of the vagina, shutting it off from the peritoneal cavity.

In those cases in which the peritoneum cannot be entirely brought together, and there has been considerable denudation, the vaginal opening may be closed and drainage accomplished by the glass tube or the gauze twist brought out at the lower angle of the wound. The advantage of thus leaving the stump is that the wound will close in a short time, and we do not have the depressed granulating wound, to delay the subsequent convalescence and to leave for years a weakened ventrum.

Sacral Resection.—Kraske, in 1885, pointed out the accessibility of the middle part of the rectum by a posterior incision, removing the coccyx and part of the lower two segments of the sacrum. Hochenegg and Herzfeld have demonstrated the application of this procedure to some of the gynecologic operations. When we consider the position of the uterus in the pelvis, we can but recognize that the shortest distance to it is directly through the lower extremity of the sacrum. The application of this operation to gynecologic work is necessarily limited, but it is none the less of interest as a method of procedure in some cases that offer complications by the ordinary plans of operation.

I have reported two cases in which this operation has been performed for the removal of the uterus. In one the condition was complicated by carcinoma of the middle part of the rectum, involving the upper part of the posterior wall of the vagina and the cervix. In the operation, about three inches of the rectum, the upper part of the posterior wall of the vagina, the uterus, and the ovaries were removed. The patient recovered from the operation, but succumbed six months later from a return of the disease.

The second case occurred in a nulliparous woman, who had epithelioma of the cervix, complicated by a previous inflammation of the tubes and ovaries that had bound them down to the uterus posteriorly. It is recognized that ordinary vaginal hysterectomy, with an undilated vagina, with the uterus, ovaries, and tubes bound down by adhesions, would be an exceedingly difficult procedure.

In considering the case, it was determined to perform the operation by sacral resection in preference to opening the abdomen from above. The result was exceedingly gratifying; the tubes were easily reached, readily ligated, the vessels could be seen, the relation of the ureters to the uterus determined, and the organs accordingly very readily avoided. The method of performing the operation has been so thoroughly described in recent publications that it does not seem necessary to occupy your time further in its description.

Analgesic Mixture.—

℞.—Menthol, Chloral, Camphor ... āā ℥ijss.—M.

Triturate to liquefaction.

S.—Apply with friction for odontalgia and the pains of rheumatism and neuralgia.

Journ. de Méd. de Paris.

CLINICAL MEMORANDUM.

A METHOD OF INFECTION, TREATMENT, AND PROPHYLAXIS OF PURULENT OPHTHALMIA.[1]

BY GEORGE M. GOULD, A.M., M.D.,
OPHTHALMOLOGIST TO THE PHILADELPHIA HOSPITAL, PHILADELPHIA.

I. AS TO THE DISEASE.

ALMOST every case of purulent conjunctivitis indelibly impresses upon the mind of the surgeon two striking and puzzling facts:

1. The obstinacy of the disease, its stubborn persistence and unaccountable resistance to the most thorough and most scientific methods of treatment. We cleanse, we irrigate, we antisepticize, we deplete, we use counter-irritants, we stimulate, we constringe, and we cauterize—and the wretched pathologic processes keep on and on until cornea and eye are irremediably injured or ruined. Various explanations of this fact have been made, but to my knowledge the one that I am about to offer, and which seems to me to be one of perhaps several contributing causes, has not before been given.

2. With one eye infected we hasten to isolate the good eye, using all the methods, so well known, of shields, bandages, antisepsis, and various cautions to patient and nurse. Despite all our prophylactic measures, carried out with the utmost care and apparent success, the hitherto sound eye is, by-and-by, too often found infected, and we have to redouble our exertions to save that. Very often, indeed, the eye last affected is most affected and most injured.

II. A METHOD OF INFECTION.

The explanation of these two characteristic features, or rather *one* explanation of them, I believe to be the rôle played by the nose and the lachrymal excretory apparatus as transferring agents and hiding-places of the specific germs.

1. Nose-picking with this class of patients is more common than eye-rubbing. While, therefore, the contagium may have been transferred directly to the eye, it is quite as reasonable to suppose that it may first have passed through the nares, duct, sac, and canaliculus.

It is a work of supererogation to set forth before this audience of specialists the well-known facts of the interdependence of nasal and ocular disease. I have elsewhere recapitulated these facts, and need only say that a large number of observers have demonstrated that the ocular drainage-system may be the passageway for the transfer of morbific material from the antrum of Highmore, and the nasal or post-nasal cavities, to the eye. Every modern book on rhinology speaks of this, and every physician has seen evidences of it. This, however, has been shown or suggested only in so far as relates to phlyctenular and sundry of the slighter forms of conjunctival and corneal disorders. It seems strange that no one has taken the suggested step of applying the same explanation to the origin of the more virulent types of gonorrheal and contagious purulent disease.

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[1] Abstract of a paper read before the Section of Ophthalmology of the American Medical Association at Detroit, June, 1892.

2. Whether or not the primary contagium may have reached the eye directly or by way of the nose, the canaliculus, sac, and duct will most certainly be the secondary sinuses and hiding-places of the specific germs or septic material. We kill the gonococcus upon or in the conjunctiva, but do not think of the enemy intrenched just beyond the border, waiting to break over the moment our antiseptic army withdraws. Or the analogy of the Channel tunnel—both ends in possession of the French—may strike the English imagination better. In purulent ophthalmia the congestion of the parts, and doubtless often the stenosis, more or less complete, of the lumen of the canaliculus and duct, prevent any effective antiseptic irrigation of the same by natural capillarity or unaided excretion. Expression of the canaliculus and sac-contents, and aided irrigation in the manner I have advised in dacryo-cystitis (*N. Y. Med. Journ.*, June 4, 1892), would perhaps do in light cases, and when the physician does not slit the canaliculus. The thick, purulent, and gummy character of the ocular secretions can find little or no passageway through the tight punctum and canaliculus, whose lumen is narrowed or quite closed by the swollen tissues about it or forming it. Hence the living germs lying just beyond the action of our ordinary antiseptic agents, and multiplying by millions in a few hours, have an excellent breeding-ground, whence, continually erupting through the punctum, we have a prolific fountain of fresh infection.

3. Passing down the duct also, is it not natural that the germs should readily find their way around the turbinated bones and up through the opposite duct to the other eye, and thus, despite all our isolation and prophylaxis, infect that by means of the tunnel or secret passageway we had forgotten? If this seem somewhat too long a journey, repeated direct infections of the nares by the fingers would explain the late appearance of the disease in the second eye.

The foregoing explanation finds corroborative support in the fact that the nasal mucous membrane, and probably therefore the lining membrane of the duct, sac, and perhaps (though doubtless to a lesser degree) also of the canaliculus, are more resistant to the microbes of suppuration and gonorrhea than the conjunctiva. It is a curious fact, this of the extraordinary sensitiveness of the ocular conjunctiva to the injurious action of these germs, and it indicates that these find in the ocular tissue a food exactly to their liking, which they are therefore continually seeking—trying always to get away from the less fertile ground of the nasal mucous membrane and into the richer soil of the ocular analogue. The granulations of trachoma have been found in the canaliculus and sac, but not, I believe, in the nose.

A recent German writer has noticed that young infants of gonorrheal mothers often show evidences of the specific infection (mucous patches) in the mouth, and that sometimes, following these oral ulcers, there ensues ophthalmia neonatorum. He also alludes to the fact that throughout the entire body the ciliated or cylindrical type of epithelium of mucous membrane is very resistant to the gonococcus, whilst in that lined by squamous or round-celled epithelium the microörganism multiplies prodigiously. This, therefore, explains why the nose and duct escape injury, whilst the conjunctiva is destroyed. It may also be added that perhaps the eye of the infant may be infected without the intermediation of the nose, by means of the hands of the careless mother or nurse (even by the child's hands), that may convey the virus directly from the mouth to the eyes.

III. The Treatment

suggests itself. The next case of gonorrheal ophthalmia I have I shall at once slit the canaliculus clear into the sac, cleanse, and antisepticize the latter precisely as I do the palpebral sulci, and thoroughly syringe the duct with the antiseptic solution. This I shall do as often and as carefully as the distinctly ocular cleansing and antisepsis. I shall also direct the same solution or a stronger one to be snuffed up the nose.

IV. The Prophylactic Measures

are quite as clearly indicated. With one eye certainly infected, I would, besides the usual prophylactic procedures, at once also open the canaliculus of the sound eye, and, while the danger lasts, irrigate the sac and duct thoroughly and repeatedly. The nasal douche also should not be neglected. The patient's hands and fingers should of course be kept aseptic and away from his nose just as carefully as from his eyes.

It may be said that this is all theory, and that I should have proved it by clinical experience before advocating it publicly. I have by experience found some confirmative evidence of the theory, but at present my only answer is that since the idea first occurred to me I have had no suitable cases, and my interest in your patients leads me to advise you to try the plan. It might save a few eyes that would be ruined whilst I alone were experimenting. I would prefer to be the father of a false theory rather than that a single eye anywhere should be blind for lack of one little method of treatment that at least seems rational, and the application of which, if it do no good, can certainly do no harm.

MEDICAL PROGRESS.

Pure Culture of Tubercle-bacilli from Sputum.—KITASATO (*Archiv für Hygiene*) has succeeded in obtaining pure cultures of tubercle-bacilli from the sputum of tuberculous patients. The morning expectoration was received in sterilized receptacles, and the individual masses of sputum were isolated by means of sterilized instruments and washed at least ten times with sterilized water. Examination of portions of the mass often disclosed the presence of tubercle-bacilli exclusively, and inoculation of glycerin-agar or blood-serum yielded pure cultures of tubercle-bacilli. It was also found that most of the bacilli in the sputum, as well as of those found in the contents of pulmonary cavities, were dead.—*Corr.-bl. f. Schw. Aerzte*, 1892, No. 9.

A Bacillus Resembling that of Influenza in the Saliva of Domestic Animals.—FIOCCA (*Centralbl. f. Bakteriol. u. Parasitenk.*, 1892, xi, 13, p. 406) has found in the saliva of dogs and cats a bacillus in appearance and culture closely resembling that described as the cause of influenza, and being pathogenic for rabbits, guinea-pigs, young rats, and mice.

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SATURDAY, JUNE 11, 1892.

THE AMERICAN MEDICAL ASSOCIATION.

As we go to press, the American Medical Association is in session at Detroit. The work of the first two days in the principal bodies of the Association is succinctly reflected in the reports presented elsewhere in the current number of THE NEWS.

The Association has laid out a vast deal of work for itself, which the experience of the past and the representative character of the participants lead us to hope will be well and creditably done. Certain ethical matters of paramount importance to the well-being of the medical profession of the United States will also come up for consideration, and these we have no doubt will be disposed of in a manner worthy of the nobility of a great profession.

As will be seen by the report of the general session, an important innovation has been made by the establishment of a General Business Committee, as a result of which a radical change is effected in the management of the Association.

The Association is to be congratulated on holding its meeting at Detroit, and its officers and the various committees deserve the warmest thanks for the admirable arrangements, scientific and social, and for the cordial welcome extended to the host of visiting physicians.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Boston, May 31, June 1 and 2, 1892.

(Continued from page 641.)

IN the discussion of Dr. Homans's paper (see p. 645), DR. A. VANDER VEER, of Albany, stated that in looking over his notes he had found that uterine fibroids were most prolific between the ages of thirty and forty-eight years. The hemorrhage, which is usually the symptom that attracts the attention of the patient, is dependent not so much upon the size of the tumor as upon its location. The hope that after the menopause is reached the fibroid will subside is not always realized. In some cases the tumor seems to take on a more active growth at that time. As to treatment, curetting and packing with iodoform-gauze will often stop the bleeding. If this fails in small fibroids, oöphorectomy invariably cures except in the case of soft myomas. The danger in treatment depends upon the size of the tumor. The large growths are responsible for the mortality after operation.

DR. J. EWING MEARS, of Philadelphia, contended that if the only reason for the removal of the tumor was from an esthetic point of view, on account of the large size of the abdomen, the patient's desire alone should not be the guide for operation. He related the case of an unmarried woman, who solicited the removal of a growth on account of the distention of the abdomen produced by it. He refused, and she passed into the hands of another practitioner, who did operate, the patient dying five hours later. Dr. Mears divided the cases requiring operation into two classes. Operation is justifiable, first, if the hemorrhage endangers life; second, if the pressure-symptoms are such as to make life unbearable. There are, however, many cases in which, under palliative treatment, life may be prolonged, the patient rendered comfortable, and made able to enjoy life. He had found electricity palliative, but not curative. The tumor is sometimes reduced in size.

DR. GEORGE W. GAY, of Boston, spoke of the treatment of fibro-cystic tumors, and referred to the practice of tapping. He reported one case in which he began tapping in 1879, repeating the procedure every two or three weeks for four years; ninety tappings in all were made. The patient is now in good health, with a large abdomen, but has not been tapped for years. Other similar cases were reported.

DR. ROBERT ABBE, of New York, referred to the value of the Trendelenburg posture, and early control of the arterial supply to the uterus in these operations. He was rather surprised at Dr. Homans's assurance that death from hemorrhage was rare. He had thought the contrary. It is the symptom that frightens the patient and alarms the surgeon. He had had fair success with electricity, and would advise it in many cases. The tumor will grow, but the hemorrhage will cease.

DR. HOMANS, in conclusion, stated that the application of strong currents of electricity to the interior of the uterus caused some change in the mucous membrane, checking the bleeding, but it did not prevent conception. It is his custom to advise patients with

fibroid tumors not to marry. Cases bearing upon this point were related.

SECOND DAY—JUNE 1ST. *Morning Session.*

The morning session was devoted to a visit to the Massachusetts General Hospital, where a number of interesting cases were shown and the methods of work demonstrated.

Afternoon Session.

DR. N. P. DANDRIDGE, in Cincinnati, read a paper on "The Surgery of the Tongue," devoting especial consideration to the subject of operative procedure in malignant disease. Carcinoma of the tongue, as a rule, appears in the form of epithelioma, running its course in about a year and a half. In many cases it develops from an indifferent lesion that has been subjected to continued irritation. Neighboring glands are usually affected, sometimes within three months, at other times not for six or nine months after the appearance of the disease. Ulcerated epitheliomata may require differentiation from tuberculous and syphilitic ulceration.

The history of operations in carcinoma of the tongue was considered and the propositions laid down by Treves were concurred in: the organ should be removed by means of the scissors or the knife; the removal should, as a general rule, be effected through the mouth; every means should be taken to reduce the hemorrhage to a minimum; when the floor of the mouth is involved, or the glands extensively involved, the incision should be carried out through the neck.

The various methods of operation — Whitehead's, Morant Baker's, Kocher's, and Volkmann's—were described in detail.

In Whitehead's operation a gag is employed, care being taken to avoid pressing back the jaw and interfering with respiration. The patient occupies a sitting position. A ligature is passed through the anterior part of the tongue and the section is made with scissors. If the frenum and the anterior pillars of the fauces are completely divided, the tongue can be drawn freely from the mouth. The organ is then separated by free incisions with the scissors, until the main artery is reached. This is seized with forceps before division. Before completely severing the tongue, it is desirable to pass a loop of silk through the glosso-epiglottidean fold, in case it may become necessary to make traction on the posterior floor of the mouth. The parts are then rendered as aseptic as possible by swabbing them with 1 : 1000 solution of mercuric iodide, and painted with iodoform styptic solution—Friar's balsam in which the spirit is substituted by a concentrated solution of iodoform in ether, one part in ten of turpentine having been added to the ether. This varnish is repeated daily. The patient is not kept in bed, but is encouraged to go in the open air. Whitehead has reported 104 cases of total removal of the tongue by this method, with 20 deaths, or 19.20 per cent. Of 61 patients, 15 survived the operation one year; 4, two years; 2, three years; 4, five years; and 1, six years.

In Baker's operation a thread is passed on each side of the tongue half an inch from the median line. The attachments of the tongue on the side are divided with scissors, keeping close to the lower jaw. The mucous membrane is next divided in the median line and the two halves of the tongue are separated by the finger. The diseased half of the tongue is then removed with the écraseur. Enlarged glands should be searched for and removed either from the floor of the mouth or by an external incision.

Kocher's operation has been commended in cases in which the floor of the mouth and the submaxillary glands are involved. It is, however, too serious an operation for cases in which the disease is confined to the tongue. Tracheotomy is first performed, and the fauces are plugged. An incision is then made along the anterior border of the sterno-mastoid muscle. From the first, an incision is made from the middle of the sterno-mastoid muscle to the hyoid bone and along the anterior border of the digastric muscle to the jaw. The flap is turned up, and the facial artery and vein and the lingual artery are tied. The submaxillary fossa is then completely cleaned out. The attachments of the tongue are now divided, and the organ is drawn through the opening and removed either in part or in whole by scissors or the galvano-cautery. If the whole tongue is removed, the lingual artery of the opposite side must be ligated through a separate incision. The tracheotomy-tube is allowed to remain, and the wound is kept packed with gauze soaked in a solution of carbolic acid, which is changed twice a day, when food is given. In fourteen cases there was only one death.

Volkmann's method has been attended with extraordinary success, there having been only two deaths in ninety-one operations. The patient is seated in a chair. If the tongue can be brought forward, a resection is made with knife or scissors, and the mucous membrane is brought together, or if a strip of healthy tongue is left it is turned around so as to make a short, broad organ. If the disease is too extensive to admit of this method, a traction-thread is passed through the tongue, and the organ is drawn forward. The canine or first molar tooth is extracted; an incision is made downward from the corner of the mouth, and the lower jaw is divided. The portions of bone are separated, and the attachments of the tongue are divided. The cut surfaces are covered with mucous membrane, and the bone is wired. A drainage-tube is placed in the tonsillar fossa and brought out at the lower extremity of the incision.

If operation is not indicated, or if the patient refuses surgical interference, the application of a powder containing iodoform, one grain; morphine, from one-sixth to one-half grain; borax, three grains—directly to the painful spot—has been recommended. Cocaine has been resorted to, either by direct application or by hypodermatic injection, but there is danger of the establishment of the cocaine-habit. The excision of a portion of the lingual nerve has been recommended, but the relief thus afforded may be only temporary. For the relief of salivation and fetor, various antiseptic mouth-washes may be employed. If, on account of the pain, there is difficulty in swallowing, relief may be afforded by painting the surface freely with cocaine just before the administration of food, or a soft-rubber tube may be passed into the esophagus.

The following conclusions were submitted: 1, sufficient experience has been accumulated to show that the removal of carcinoma of the tongue prolongs life, adds to the comfort of the patient, and affords reasonable

hope of a permanent cure; 2, all operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth; 3, in the treatment of persistent ulcers and sores on the tongue, caustics are to be avoided and all sources of irritation removed; 4, persistent sores on the tongue should be freely removed by knife or scissors if they resist ordinary treatment; 5, when the disease is confined to the tongue, Whitehead's operation should be employed for its removal; 6, in this operation the advantage of preliminary ligation of the lingual artery is not definitely settled, but the weight of authority is against its necessity; 7, the advantage in unilateral disease of leaving one-half of the tongue must be considered undetermined, but the weight of positive experience is in its favor; in splitting the tongue into lateral halves, Baker's method of tearing through the raphé should always be employed; 8, a preliminary tracheotomy in ordinary cases adds an unnecessary element of danger in the removal of the tongue; 9, when the floor of the mouth has become involved or the glands are enlarged, Kocher's operation should be employed, omitting the spray and preliminary tracheotomy; 10, removal of the glands by a separate incision, after the removal of the tongue, must be considered insufficient; 11, Volkmann's method still rests on individual experience; its true value cannot be determined until it has been subjected to trial by a number of surgeons; 12, thorough and complete removal should be the aim of all operations, whether for limited or extensive disease; 13, by whatever method the tongue is removed, the patient should be up and out of bed at the earliest possible moment, and should be generously fed.

DR. D. W. CHEEVER, of Boston, referred to the question of diagnosis of ulcers of the tongue. Dyspeptic ulcers appear in successive crops. They are not indurated, and can be made to heal by simple treatment. In the diagnosis of syphilitic ulcers, the previous history is at times of service. In doubtful cases, two weeks of anti-syphilitic treatment should be employed. Lupus or tuberculous disease of the tongue is not as common as carcinoma. Tubercle-bacilli are not always found. Tuberculous ulcers form and re-form; some heal and leave scars. Carcinoma does not heal, but goes on extending. In lupus, the sublingual and submaxillary glands are early infected. True carcinoma is almost always at the side of the tongue; the infection of the glands is usually speedy. Dr. Cheever advised the removal of enlarged glands, but he did not think that the neck should be treated as is the axilla. He thought that malignant affections of the mucous membrane are more rapid in recurrence than are malignant affections of the skin and glandular structures. In carcinoma of the tongue, the disease as a rule recurs in from four to six months. In simple carcinoma of the tongue, without glandular involvement, preliminary tracheotomy is not required. Dr. Cheever operates with the patient in the sitting position, and not thoroughly etherized. He has never tied the lingual artery for carcinoma. If the disease is limited, partial amputation of the tongue seems to have been as successful as total removal. Recurrence almost always takes place in the glands and rarely in the stump. Reference was made to the remarkable recovery of the ability to speak in cases in which the tongue has been completely removed.

DR. L. MCLANE TIFFANY, of Baltimore, stated that in considering operative interference a distinction should be made between cases in which the disease involved the anterior portion of the tongue, and those in which the disease has begun more or less posteriorly and there is glandular involvement. In the latter cases, he prefers division of the lower jaw, either at the symphysis or at the side. He thinks it wise to remove the glands beneath the tongue, even if not enlarged. In this way one of the routes of systemic infection is removed. If the posterior portion of the tongue is involved, permanent recovery is rare; if the glands are involved, recovery is still more rare. Dr. Tiffany has obtained the best results by dividing the jaw and securing drainage from below. The incision is not closed, and ample opportunity for drainage is provided. The operation is done with the patient on the side and the head near the edge of the table, full anesthesia with chloroform being employed. If the tongue is excised for tuberculous ulceration, the ulcer rarely recurs, although the general tuberculous disease may progress.

DR. T. F. PREWITT, of St. Louis, remarked that the selection of the operation depends largely upon the extent and location of the disease of the tongue. If the carcinoma is limited to the tongue, an operation through the mouth is sufficient. If the floor of the mouth be involved and the disease has extended to the bones, something more is needed. In one or two instances he has resected portions of the jaw. He does not think that the primary hemorrhage is to be dreaded, but he has seen death from secondary hemorrhage in a case in which the arteries were diseased.

DR. W. H. CARMALT, of New Haven, stated that he has found it an advantage to perform preliminary tracheotomy. The most frequent cause of death after operation is septic pneumonia from the inhalation of infective material. Tracheotomy not only facilitates operation, but it obviates the danger of septic pneumonia. In the last case upon which he had operated, he first performed tracheotomy and packed the fauces. The patient did well. At the end of four days he removed the tracheal tube and allowed the patient to breathe by the mouth. On the next day the temperature had risen to 102°. The tube was immediately re-introduced, and the fauces packed, and in twenty-four hours the temperature was again normal. In cases in which the glands are involved, he advises the Kocher operation. In regard to the after-treatment, he has found that patients bear the presence of the esophageal tube better than its re-introduction.

DR. R. F. WEIR, of New York, stated that he has removed the tongue five times by the Whitehead operation, and five times by the Kocher operation, and has removed one-half of the tongue ten times by Whitehead's operation. If the floor of the mouth or the glands are involved, he prefers Kocher's operation. If there are signs of glandular enlargement in the submaxillary space, he considers it good surgery to cut down in front of and behind the sterno-mastoid muscle and examine the condition of the lymphatic glands in this situation. In the Kocher operation he prefers tracheotomy, and if there is sufficient time he does it a few days before removing the tongue. He considers tracheotomy a great advantage both at the time of operation and afterward.

DR. A. G. GERSTER, of New York, stated that he has

extirpated the tongue in various ways in nineteen cases. He thinks that the more thorough and radical the operation, the better are the results. He advocates removal of the affected glands, and the performance of tracheotomy. This enables the operation to be more thoroughly done, and with more comfort to the surgeon and less danger to the patient. In this region, as in every other region of the body, thorough operation requires thorough anesthesia.

DR. T. J. DUNOTT, of Harrisburg, reported a case in which the tongue was greatly enlarged and protruded from the mouth. The operation was done several years ago, and the patient is still living and well.

DR. JOS. RANSOHOFF, of Cincinnati, reported a case in which he operated by the Mordant Baker method four and a half years ago, and there has been no relapse. In other cases in which he has operated, he has not obtained the same success. In every case in which he does not perform a Kocher operation, he makes an incision in the submaxillary triangle in order to put in a large drainage-tube reaching to the floor of the mouth. This opening gives an opportunity for the examination of the glands. If there is enlargement, the glands can be turned out or the incision enlarged if necessary.

DR. W. H. CARMALT, of New Haven, Conn., read a paper entitled "Conditions Demanding Excision of the Globe of the Eye." He stated that, as a rule, the question of the propriety of enucleating an eye will be referred to the specialist. There are cases of emergency, however, in which the general surgeon is called upon to act promptly. In the consideration of this subject, it at once presents itself from two different standpoints, accordingly as the eye is blind or retains a more or less useful degree of vision.

In the case of blind eyes, the objections to the operation are the dangers of the operation *per se*, and the cosmetic effect. Meningitis has occurred in some cases operated on in the acute stage of suppurative panophthalmitis. In these cases, the organ should be removed as soon as the evidences of suppuration are unmistakable. In cases of lacerated or penetrating wounds, with loss of vision, the operation is better performed before suppuration occurs, or as soon as the evidences of suppuration are sufficiently plain. There is no one condition for which eyes are so frequently excised as sympathetic ophthalmitis (threatened or actual). The pathology of the sympathetic process is still a matter of controversy. In a case presenting irritative symptoms indicative of the beginning of sympathetic ophthalmitis, with the other eye lost from injury or some form of disease, it is the duty of the surgeon to advise in the most unqualified manner the enucleation of the blind eye. The initiative stage is usually short. It is more or less rapidly followed by impairment of vision due to an organic lesion. In the acutely inflammatory stage of the sympathetic disease, the removal of the "excitor" is not so beneficial to the "sympathisor," and may be harmful, adding fuel to an already flaming fire. In these cases the operation should be postponed until the active process is subdued. In a small number (perhaps about 10 per cent.) of cases, the sympathetic inflammation may come on after the removal of the excitor, and in about 2 per cent. it has been thought to have been the result of operation. The conditions likely to give rise to sympathetic ophthalmitis are injuries and diseases. The injuries may be lacerating or perforating wounds, so severe as inevitably to result in atrophy of the globe; the lodgment of a foreign body in the interior of the globe; a penetrating wound involving the ciliary region. The diseases attended with ophthalmitis are recurring or chronic irido-choroiditis, from whatever cause; atrophy of the globe following purulent keratitis, or panophthalmitis, or in which ossific degeneration of the retina has taken place; atrophy of the globe from any cause, with pain in the ciliary region. Time does not confer immunity to sympathetic disease. The liability to the disease differs with the various injuries and diseases. Sympathetic ophthalmitis is more frequent after injuries than after non-traumatic affections, and of injuries, nothing is so potent as the lodgment of a foreign body in the eye.

The pain resulting from the intra-ocular pressure of a chronic glaucomatous degeneration is frequently so excessive as to justify the removal of the offending organ, other means of treatment having failed.

Various diseases of the eye leave the organ in a condition so inconvenient or repulsive that aid is sought for purely cosmetic purposes. The old operation of abscision of the anterior segment of the globe, in which more or less evisceration of the contents of the globe takes place, is followed by the same result as enucleation, and sympathetic ophthalmia may also result. Enucleation of the misshapen eye, with the introduction of an artificial substitute, is much to be preferred. The modern expedient of tattooing a white cicatrix of the cornea without staphyloma has resulted in sympathetic ophthalmitis.

The utility of the enucleation of blind eyes that are the seat of phosphenes is doubtful.

In regard to the enucleation of an eye only partially blind, the chances of accident or independent disease to the remaining eye are sufficiently great to justify the statement that nothing short of the certainty of ultimate blindness to both, or of death, can permit one to consider such a procedure.

Intra-ocular tumors are usually granulomata or carcinomata. They are sufficiently dangerous to life to demand the removal of the eye.

Extra-ocular growths are of greater variety of histologic structure. Sarcomata of the orbit often necessitate removal of the globe.

Should an eye that retains an appreciable degree of vision be removed in order to avert a threatened or prospective attack of sympathetic disease in the fellow? It is unjustifiable to remove an injured but still seeing eye, though it may be an excitor of sympathetic disease. The result of operative interference has not been sufficiently successful in averting the progress of the malady after it has begun, to warrant recommendation. The only condition rendering justifiable the removal of a still seeing organ, for sympathetic disease, is the presence of a foreign body in the eye, as it is likely to be followed by sympathetic disease.

The following officers were elected:

President: Dr. N. Senn, of Chicago.

Vice-Presidents: Dr. W. W. Keen, of Philadelphia; Dr. Chas. B. Porter, of Boston.

Secretary: Dr. J. R. Weist, of Richmond, Ind.

Treasurer: Dr. John B. Roberts, of Philadelphia.

Recorder: Dr. J. Ewing Mears, of Philadelphia.

Members of Council: Dr. Roswell Park, of Buffalo, and Dr. R. F. Weir, of New York.

Member of the Executive Committee of the Congress of American Physicians and Surgeons: Dr. N. McLane Tiffany, of Baltimore; alternate, Dr. James McCann, of Pittsburg.

It was decided to hold the next meeting at Buffalo, in May, 1893.

Dr. Roswell Park was elected Chairman of the Committee of Arrangements.

The following were elected to membership: Dr. Charles B. McBurney, of New York: Dr. John B. Deaver, of Philadelphia; Dr. Frederick H. Gerrish, of Portland, Me.; Dr. Wm. S. Halstead, of Baltimore, Md., and Dr. Henry R. Wharton, of Philadelphia.

THIRD DAY—JUNE 2D.

The following papers were read by title:

"Surgical Operations in Persons Suffering from Diseases Not Connected with that Necessitating the Operation, such as Chronic Malarial Poisoning, Diabetes, Organic Heart-disease, etc.," by DR. W. T. BRIGGS, of Nashville, Tenn.; "Ancient Contractures of the Hip-joint and Knee-joint," by DR. T. F. PREWITT, of St. Louis, Mo.; "A Case of Gastrorrhaphy for Diminution of a Dilated Stomach," by DR. ROBERT F. WEIR, of New York; "A Case of a rare form of Upward Dislocation of the Hip," by DR. LEWIS A. STIMSON, of New York; "Report of Operations upon Spina Bifida and Encephalocele," by DR. A. T. CABOT, of Boston; "Ulcer of the Stomach: Proposed Surgical Treatment," by Dr. E. H. BRADFORD, of Boston; "Congenital Cyst of the Pancreas: Removal; Recovery; Tumor of the Cecum, Causing Intussusception; Laparotomy; Reduction of Intussusception and Removal of Tumor; Death," by DR. M. H. RICHARDSON, of Boston; "Hernia of the Left Fallopian Tube," by DR. JOHN HOMANS, of Boston; "A Case of Sarcoma of the Tonsil; A Case of Chronic Appendicitis," by DR. STEPHEN H. WEEKS, of Portland, Me.; "The Diagnosis and Successful Treatment of Some Cases of Cerebral Tumor," by DR. F. S. DENNIS, of New York; "Lymphangioma of the Neck," by DR. C. B. NANCREDE, of Ann Arbor; "Successful Case of Enterectomy and Enterorrhaphy, with Removal of Sarcoma of Mesentery; Successful Case of Trephining of the Spine for Fracture of the Lamina and Partial Dislocation of the Bodies of the Eleventh and Twelfth Dorsal Vertebræ," by DR. JAMES MCCANN, of Pittsburg; "A Case of Removal of an Enlarged Accessory Thyroid Gland at the Base of the Tongue," by DR. J. COLLINS WARREN, of Boston.

The morning session was held at the Boston City Hospital, where a number of interesting cases were exhibited.

In the afternoon, at the invitation of the President of the Board of Health, the Association inspected the method employed for the disposal of the city sewerage, and visited the Hospital under the charge of the Board of Charities.

The Association then adjourned to meet in Buffalo in May, 1893.

AMERICAN ACADEMY OF MEDICINE.

Seventeenth Annual Session, held at Detroit, Michigan, June 4 and 6, 1892.

FIRST DAY—JUNE 4TH.

THE session was opened by DR. R. LOWERY SIBBETT, the First Vice-President, in the absence of the President, Dr. P. S. Conner, of Cincinnati.

DR. MCINTIRE read the Report of the Council. The Council expressed its belief that there was a slow but steady rise in the standard of medical education in America, as indicated by the adoption of a four years' obligatory course by several medical schools; by the new regulations for preliminary education adopted by the Illinois State Board of Health; by the raising of the standard for preliminary education for the study of medicine by the Regents of the University of New York; by the acknowledgment of the value of a collegiate education by the Medical Department of the University of Pennsylvania, in admitting to advanced standing graduates of those colleges in which the curricula include certain studies; by the announcement, recently made, that the American University contemplated by the Methodist Episcopal Church will be open only to the graduates of colleges—*i. e.*, making a degree necessary for entrance upon post-graduate study.

The Academy has an active membership of 543, and 19 honorary members, 10 of which are residents of Europe. Nine Active Fellows and 2 Honorary Fellows died during the year.

Five Bulletins of the Academy were issued during the year.

Sixty-five new Fellows were elected.

The Report of the Committee on Eligible Fellows was read by DR. JUSTIN E. EMERSON. The Committee devoted its energies mainly to preparing a list of college alumni that are members of the medical profession in the United States, and a list of 3455 names was obtained of those that, if not already Fellows of the Academy, or irregular in their modes of practice, are presumably eligible to fellowship.

An effort has been made to send the Bulletin of the Academy, stating its objects, especially to the alumni of prominent Southern and Western colleges, among which the Academy has almost no Fellows.

An inspection of the comparative number of presumably living medical alumni of the colleges catalogued by the Committee, shows that out of 4000, about 14 per cent. have ceased to practise their profession.

There are probably 5000 practising physicians that are college alumni, which means that not more than 5 per cent. of the physicians of the United States have had the liberal education that such graduation implies. This estimate makes no allowance for any large percentage of physicians of foreign birth and education.

The Report of the Committee on the Comparative Value of Academical Degrees was read by DR. MCINTIRE. The Academy adopts, provisionally, the requirements of the Ohio College Association for the degree of A.B. as the minimum standard of acceptance, with the single possible exception of the length of the college year.

The Committee has also endeavored to express the standard of the A.B. degree, by defining what its pos-

sessor should be, rather than by enumerating the studies that he should pursue to attain that degree; by defining the product rather than the process.

Educational advantages offered and made use of do not necessarily produce a skilled practitioner of medicine. Aptitude and tact are also required. Knowledge of medicine and technical skill do not include all that a physician should possess. Training in this direction may develop the specialist at the expense of the man. An educated physician should have a disciplined mind, the essence of which is the power to concentrate attention for a long time upon any subject presented. Having this power he can appreciate the advance in science and literature, though he may not be able to assist in it.

The aim of the Academy has been to direct and encourage medical students in the line of studies most likely to produce the best results to the greatest number.

A third line of research proposed by the committee was a comparison of the English A.B. with the American degree, for the purpose of obtaining additional evidence for the one mission of the Committee—an academic standard for a liberal education.

DR. A. L. GIHON read the proposed changes in the Latin certificate granted by the Academy to its Fellows. The changes were suggested by Dr. Steiner, and were intended to give recognition to those that, while not having a college degree, have nevertheless had an education regarded as equivalent.

The changes were adopted, and Dr. Benj. Lee was appointed to the position on the Committee made vacant by Dr. Steiner's death.

DR. ELBERT WING, of Chicago, read a paper on "The Relative Value of Academical Training in Undergraduate Medical Study; an Analysis of the Personal Experience of the Writer." He stated that a satisfactory discussion of the subject must include the following points:

1. The quality of the collegiate training of the writer. 2. The training, collegiate or otherwise, of his classmates. 3. The curriculum in the medical college, and the methods of teaching the several branches. 4. The result of the work as realized by daily quizzes, and by final examination. 5. The results as shown by subsequent success in professional work.

From the standpoint of a teacher, the men of college grade are easily superior to the others in quickness of perception and in breadth and firmness of grasp of any subject submitted to them, other things being equal; but they are not always equal, *e.g.*, when students are older and more mature in every way than the average of those who hold college degrees.

DR. W. D. BIDWELL, of Washington, D. C., read a paper on "The Value of Academical Training Preparatory to the Study of Medicine." It is only when the common-school education is completed, only when with increasing development of body and concomitant expansion of mind the academic course is entered upon, that the reasoning faculty is brought into full play, and the youth comprehends the relation and interdependence of mind and body. Dr. Mark Hopkins always insisted that the object of a college training was to develop the whole man, mentally, morally, and physically. With this idea, at Williams college men studied first as physical beings in a physical universe, then as rational creatures, and lastly as having a moral nature enabling them to appreciate their relations and obligations to their Creator.

We must be *men*, strong-bodied, broad-minded, noble men, before we can be physicians worthy of the name. What then can be of greater value as a preliminary to medical study than such a course of training as will transform the raw material of uneducated youth into lords of the universe.

DR. H. B. ALLYN, of Philadelphia, read a paper on "The Value of Academical Training Preparatory to the Study of Medicine." The value of a college education is not to be estimated from the prescribed course of study alone, but also from all those influences to which a student is exposed during his college course.

These influences help very decidedly to fit a man for his social duties, and render him, by just so much, the superior of those who have not had equal advantages. The point to be made is, that a wise use of the opportunities afforded by college life, apart from the course of study pursued, makes a man larger, broader, and better equipped for success in the social sphere than he could otherwise have been; and every man of experience knows that ability to understand men and women, to get along with and please them—the social *tactus eruditus*, it may be called—is not the least significant element in professional success.

Perhaps the most important advantage of a preliminary college education lies in the fact that it makes the subsequent acquisition of medical knowledge much easier than it otherwise would be.

There is abundant evidence that a preliminary college education enables a student to save much time and labor in his medical course. After all, it is only making a specific application of the well-known truth—that the more a man knows, the easier it is for him to acquire additional knowledge. We progress by steps, not by leaps.

In summing up it is to be said that an academic course preparatory to the study of medicine has a twofold value. In the first place, the college influences, apart from the course of study, increase the extent and comprehensiveness of the student's mental vision, help to rid him of pretensions, prejudices, and vanity, supply him with a valuable acquaintance, inspire him with laudable ambition, and spur him to praiseworthy effort.

In the second place, the course of study stores the student's mind richly, in proportion to his capacity and industry, with knowledge that much facilitates his subsequent study of medicine. He comes to his chosen profession taught by experience how to study, how to "see straight and think clearly," and he exhibits a quickened apprehension and a more thorough grasp of the subjects presented than do his fellows.

One who practises medicine in a large city and has not had an academic education before studying medicine is very seriously handicapped.

In the discussion, DR. HELEN F. WARNER stated that education is no proper substitute for brains. The most elaborate polish will not make a quartz crystal equal to the roughest diamond. Nevertheless, on an average, college-bred students will be found superior to those without such training.

Technical training is more immediately productive

but less educative of the whole man than the more general literary training. But a man in college acquires something more than knowledge, something that can best be expressed by the much-abused word culture. This softens his manners, gives him ease, and wins him respect. Wisdom, tact, and kindliness are almost as essential qualities for a physician as learning or skill, and these cannot be taught in medical schools.

DR. L. HARRISON METTLER, of Chicago, read a paper on "The Value of a Collegiate Degree as an Evidence of Fitness for the Study of Medicine." He objected to making the A.B. degree essential for the study of medicine. He regarded such a step as odious class-legislation that would be detrimental to the best interests of the Academy. Some men have fine abilities, but have not been able to take a preliminary college training. The possession of a collegiate degree is not evidence of fitness for the study of medicine. Some greatly excel in medicine who have had no college degree. A collegiate education is a luxury, not a necessity.

DR. SELL stated that there are isolated cases of high professional attainments among men of no college training, but these men are exceptional.

DR. MCINTIRE stated that one of the objects of the Academy is to suggest to young men the best way to prepare themselves for the study of medicine. They should have a liberal education first, and then a technical education.

A liberal education is best attained in this country by a course in one of the colleges, whether the degree given be A.B. or B.S., or Ph.D. The Academy asks the colleges to certify that the B.S. or Ph.D. be up to the standard of the A.B., and if they are not, then it is not willing to accept as members those having such degrees. The physician should, first of all, be an educated man.

DR. R. L. SIBBETT expressed the view that five years should be spent in preliminary study before taking up a profession, and a choice of a profession should not be made until a man is twenty-one years old.

DR. P. S. CONNER, of Cincinnati, then read the Address of the President, on "Essentials and Non-essentials of Medical Education." He stated that four years should be spent in preliminary study, three of them in collegiate courses.

The essentials are three: (1) the body; (2) the morbid conditions to be treated; (3) the remedial measures to be applied in the treatment.

Anatomy must be the foundation study. All anatomic facts are not of equal value, however. A knowledge of the origin and insertion of a muscle is of less value than a knowledge of its general position. In the same way, a knowledge of the general circulation is of more importance than ability to describe the branches of the internal maxillary artery. Anatomy should be studied by dissection.

Physiology is another essential study. The great general principles of development, nutrition, and decay are most important; not so theories and speculations and calculations.

Chemistry is a non-essential study of the first order, except for the examination of urine, of the composition of calculi, and of impurities of water. It should be studied in the laboratory. More should be studied in preliminary courses and less in the medical schools. The Materia Medica of the present deals with active principles, extracts and alkaloids, not with botanic names. Therapeutics, not botany, is what a student needs—when to prescribe, what to prescribe, and in what dose, not where the crude drugs come from or their botanic or chemic names.

Hygiene and medical jurisprudence are non-essentials for the most part. The former teaches the student little but bacteriology, except what he should hear from the chair of medicine. It should be an elective branch. Medical jurisprudence is usually taught by a lawyer who has no conception of what constitutes careful treatment by the physician. Such teaching as is necessary should be left to the surgeon, who, in his lectures, can instruct his classes upon the legal aspects of their responsibilities.

Bacteriology is very important, but instruction in it should not be exceedingly minute. The student should be taught what forms of bacteria are dangerous; how to prevent infection by them and how best to destroy them when it is desirable to do so.

Pathologic anatomy should be taught in the laboratory by means of dissections and the demonstration of specimens.

The most important branches are the practice of medicine and the practice of surgery, of which obstetrics is a branch. They should be given as much time as possible.

The common diseases should be dealt with. He is a poor teacher who spends days and weeks in talking of any one subject. A selection of subjects should be made, and the student given clear conceptions of the most important diseases and surgical affections. Half-educated physicians do more harm than the uneducated.

Didactic lectures are not useless if given by qualified lecturers with clear perceptions of what it is most important to impart.

Clinical teaching is of great value. Four-fifths of the clinics given in our colleges, however, would be just as good if the patients were miles away. The student should be brought in contact with the patient, so that he can investigate for himself.

As to specialties, they are generally non-essential.

Among elective studies should be placed ophthalmology, otology, rhinology, and gynecology.

As regards medical education, there is ground for congratulation. Above all, the student must have a logical mind and common sense. With these, the more a man can know the better. There should be a year of purely practical training at the bedside. The great end and aim of medical education is to make not scientists or scholars, but healers of the sick.

DR. THOMAS F. MOSES read an elaborate and carefully prepared paper on "The Value of the General Preparatory Training afforded by the College as compared with the Special Preparatory Work suggested by the Medical School in the Preliminary Education of the Physician." He stated that a good education, natural talent, and industry are essential to the acquirement of knowledge of medicine.

The profession has been aroused to the needs of medical education. Three years of study are now required, and in many colleges a fourth year has been added. The defects that exist to-day are: that too little

time is occupied in preliminary education; there is too much didactic and too little clinical work, and the courses of study are too short.

Even the best schools still let improperly qualified men enter upon the study of medicine. The value of an academic degree is becoming appreciated more and more. At Harvard the number of those possessing such degrees has doubled in a few years, and it is proposed to increase the requirements until a college degree will be necessary for entrance upon study.

The rapidly increasing number of State Boards of Health is an indication that the community is requiring a higher standard of medical knowledge, and is a good sign of the times. The Illinois State Board of Health recommends that the minimum age for graduation in medicine be twenty-five years. Dr. Moses would have it made twenty-four years.

DR. KEDZIE stated that the applicant for admission for entrance as a student of medicine should be a trained student. The matter is of less importance than the manner of study. It should inoculate the system—not simply produce a superficial scab. Any mental discipline is of benefit, and there are a number of lines of study that are of value. His advice would be to select those that will be the most useful in life, on the principle that an instrument is better than an ornament. The classics may discipline, but do not educate. The question is not how much, but how well.

DR. HERRICK considered the essentials of the study of medicine. The personality of the man is a strong element. If he lacks adaptability, he is unfit. Some men are unable to comprehend a principle, but only able to see a fact. Such are also unfit. A man must know *things* and the relations of things. The applicants cannot be too strictly limited to a class. A farmer may learn much anatomy by contact with the lower animals.

The paper of DR. CHARLES JEWETT, of Brooklyn, N. Y., on "The Newer Medical Education in the United States," was read by the Secretary.

It was stated that laws recently enacted by the Legislature of the State of New York, make it obligatory upon every matriculate in a medical college either to have a collegiate education or to pass a satisfactory examination before the Board of Regents of the University of the State of New York.

Among the notable additions in recent years to the curricula of the schools of New York and Brooklyn are hygiene, bacteriology, a more extended course in normal and pathologic histology, bedside teaching and other practical courses of instruction. The graded course is not the least important improvement.

In Bellevue and the Long Island College Hospital students are required to attend recitations on the principal branches of medicine. At the latter institution during the reading term the didactic lectures have been in great part replaced by class recitations from text-books.

The most important change has been in the adoption of the object-method in teaching. Clinical work consists in actual bedside instruction, in which the student is made to a certain extent to conduct the examination and prescribe the treatment, under the guidance of the clinical teacher. He becomes familiar by handling and practice with remedial measures, instruments, and their application.

Laboratories for practical instruction in physiology, chemistry, normal and pathologic histology, and bacteriology are provided. In obstetrics the clinical teaching is supplemented by a course in manikin training in which members of the class are drilled individually in the methods of diagnosis by abdominal and vaginal examinations, and in operative obstetrics. In surgery the operations that can be so taught are practised on the cadaver.

In a word, didactic teaching has assumed a far less prominent rôle in instruction, and has been replaced by bedside and laboratory teaching.

The right to practise medicine in New York is now conferred by license from the Board of Regents of the State University; a diploma from a medical college is no longer sufficient.

Appointments to the Board are made by the Regents from nominations submitted by the several medical societies. The complexion of the examiners is thus independent of political control and the plan has the support of the profession throughout the State.

DR. W. J. HERDMAN, of Ann Arbor, Michigan, referred to the changes that had taken place in methods of instruction at the University of Michigan in fifteen years. They showed a steady and persistent effort toward higher education.

A good English education is an entrance qualification. In 1889 and 1890 a four years' course was instituted, and three years of study became obligatory. In 1889 two-thirds of the students took the four years' course. Since then a four years' course has been the only one offered, unless advanced standing can be shown on the part of the student at entrance. No student can enter the medical department who could not enter the classical department.

A course has been adopted by which the student for two years pursues studies that lead up to the degree of B.S., and remains four years to take his degree of M.D., making six years in all. During the medical course the classes are graded as in an ordinary college course, and the students are subject to the same restrictions as obtain in other departments.

Modern medicine has become intensely analytical, but now more should be done in the way of prevention of disease.

DR. ELBERT WING gave a summary of the methods of, and facilities for, instruction in the medical colleges of Chicago. The Illinois State law requires four years of medical study prior to graduation, one year of which may be spent in reading medicine with a preceptor. This year is of little value. The exceptions to the law have been in the case of students who have taken the courses antecedent to the study of medicine offered by the literary departments of several universities.

Beginning with September, 1892, a four years' course, of seven months each, strictly graded, will be begun in the Northwestern University.

All the schools are embarrassed in the teaching of pathologic anatomy, because the Cook County Hospital is the only place where autopsies can be obtained in sufficient number to make them of much value to students, and owing to the rules of the hospital, the majority of autopsies must be made at such irregular hours and such short notice, that students cannot attend them.

Pathologic histology is fairly well taught in at least three of the medical colleges of the city.

There is a growing tendency to increase the amount of clinical teaching at the expense of the didactic. There is a tendency to make both preparatory and undergraduate courses too extended.

SECOND DAY—JUNE 6TH.

DR. GIHON, Chairman of the Nominating Committee, recommended the election of the following officers for the ensuing year:

President.—Dr. Justin E. Emerson, of Detroit, Mich.

Vice-Presidents.—Drs. Thomas F. Moses, of Urbana University, Ohio; Charles Denison, of Denver, Col.; Silas D. Presbrey, of Taunton, Mass.; Herman B. Allyn, of Philadelphia.

Treasurer.—Dr. J. Cheston Morris, of Philadelphia.

Secretary.—Dr. Charles McIntire, of Easton, Pa.

Assistant Secretary.—Dr. Edgar M. Green, of Easton, Pa.

The Report of the Committee was adopted.

DR. R. LOWREY SIBBETT read a paper on "The Financial Aspects of the Academy," in which he objected to other methods of increasing the revenue of the Academy than by the charge for the *Transactions* and the initiation fees.

DR. PERRY H. MILLARD, of St. Paul, Minn., read a paper on "The Necessity and Proper Manner of Regulating the Practice of Medicine," which is to appear in a subsequent number of THE MEDICAL NEWS.

In the discussion, DR. LEARTUS CONNOR stated that the reason why medical education has been deficient is that teachers are tempted to fill their pockets at the expense of turning out unfit men. The remedy consists in having schools properly and efficiently endowed. It must be made profitable to do good teaching.

DR. VON KLEIN, of Cleveland, stated that he was educated under the methods of police supervision in Germany, but he could not approve entirely of Dr. Millard's suggestions. Anyone in Germany can practice medicine, but he cannot collect fees by law, cannot enforce his claim, or sign death-certificates.

DR. H. O. MARCY, of Boston, stated that medical education involves a duty not only to ourselves, but also to the public. Hence it is, as Dr. Connor has said, a question of sociology in its broadest sense.

Forty States have passed some law regulating medical practice. Massachusetts has no such law; it was defeated by money in the hands of irregulars and quacks, who even threatened Dr. Marcy with his life if he persisted in his efforts to have such a law passed. But the future is full of hope. Evolution is toward a better type of physician, and he is sure to come.

DR. WILLIAM PERRY WATSON, of New Jersey, stated that mixed boards worked together in entire harmony. The examinations show that there is a steady improvement in the quality of candidates.

DR. JOHN B. ROBERTS stated that Pennsylvania has no law because the regular men would not consent.

DR. VICTOR C. VAUGHAN, of Ann Arbor, Mich., read a paper entitled "Does a Classical Course Enable a Medical Student to Shorten the Period of Professional Study?"

He contended that length of time is an important element in the proper method of teaching medicine. Medicine is a science and an art. One must be familiar with the science if he would properly practise the art; consequently, he must be familiar with physics in its various branches of optics, acoustics, mechanics, and electricity; with chemistry, botany, microscopy, hygiene, bacteriology, physiology, histology, anatomy, and pathology.

These facts are generally admitted, but in many schools the branches are imperfectly taught by lecture and demonstration alone; these are essential, but laboratory practice is also essential. Along with the telling how to do, the educational process should include the *doing*. It is this that makes study in the German universities so popular.

Dr. Vaughan does not think that the average man who has had Latin and Greek can get as much out of a modern medical course in three years as the average man without classical training can get in four years. Classical training cannot supply a deficiency in any one of the physical, chemical, or biologic sciences. Classics are, however, of value, and students should, if possible, take the classical course. The man of classical training has a great advantage over one not so fortunate. While medical knowledge is best secured by experimental work, it is necessary that that knowledge be formulated, and the greater the ability to accurately formulate one's knowledge, the greater the chance that the student thinks clearly; and this power is best attained by a knowledge of the classics.

In concluding, Dr. Vaughan expressed the opinion that a classical training does not enable the medical student to materially shorten the length of time given to professional studies; but that the study of the classics does give to his professional knowledge a strength and an intensity that the man without the classical learning is not likely to feel.

AMERICAN MEDICAL ASSOCIATION.

Forty-third Annual Session, held at Detroit, June 7, 8, 9, and 10, 1892.

GENERAL SESSION.

FIRST DAY—JUNE 7TH.

THE meeting was called to order by the Chairman of the Committee of Arrangements, DR. HENRY O. WALKER, of East Detroit.

Prayer was offered by REV. T. F. DAVIES.

An Address of Welcome was delivered by GEN. R. A. ALGER.

DR. H. O. MARCY, of Boston, delivered the President's Address, taking for his subject, "Evolution in Medicine." He urged broad-minded liberality in dealing with so-called medical sects. Homeopathy, for instance, is best treated by neglect and the promotion of education.

The action of the New York State Medical Society in withdrawing from the Association was deplored. The reason for that action lay in the question of consultations. A strong plea was made for active coöperation of all State societies with the American Medical Association.

The *Journal* has a circulation of six thousand, and is established upon a paying basis.

The work of the American Academy of Medicine was heartily commended.

The practice of publishing surgical operations and other matters of cognate nature in the newspapers is to be deprecated.

Reform in coroners' laws was strongly advocated. The status of medical experts should be clearly defined.

It was urged that closer attention be paid to the study of intemperance and its treatment.

The coöperation of the Association was solicited for the purpose of securing pure foods. There should be appropriate supervision of railways, and provision for the most perfect hygiene attainable in cities.

Hearty coöperation in international congresses was strongly recommended. It has been announced that the British Medical Association will elect to membership only distinguished Americans. There is really little need for American students to go abroad for their medical instruction.

South America has given evidence of medical development.

The address was closed by reference to the memories of members of the Association that had died during the last year.

The Secretary, Dr. William B. Atkinson, urged more thorough organization on the part of State and local societies.

The Committee on Sections reported as follows:

Your Committee on Sections would report the following substitute for the amendment to the Constitution offered at the last annual meeting of the Association by Dr. J. C. Culbertson, to be known as Section VII of the Constitution, viz.: "That each Section of this Association shall elect an Executive Committee of three members, who shall be chosen from among those who have been in attendance upon the sessions of the Section for at least two years, to serve one, two, and three years, respectively; and that thereafter the retiring chairman of the Section shall take the place upon the Executive Committee of the retiring member of the Committee. It shall be the duty of the Executive Committee, in conjunction with the Chairman and Secretary, to give special attention to the interests of their own Section. These Executive Committees of the Sections so formed shall constitute the General Business Committee of the Association. They shall hold daily meetings during the sessions of the Association, and all matters of business not provided for by the Committee of Arrangements, the Board of Trustees, the Judicial Council, the Committee on American Medical Necrology, and special committees, shall be referred to them without debate.

"It shall be the duty of the General Business Committee to give especial attention to the interests of the Association, and to promote the welfare of the various Sections; to consider all matters of business referred to it by the Association, and report upon them at the earliest possible moment, when the Association may adopt or reject the report as it may deem best.

"It shall be the further duty of the General Business Committee to make and present the nominations for the officers of the Association and its Standing Committees, and recommend the time and place for the meetings of the Association.

"That the present numerical designation of the section of the Constitution entitled "Provision for Amendment," be changed by striking out the Roman numerals 'VII' and substituting therefor 'VIII.' All sections or parts of sections of the Constitution or By-laws of the Association not in harmony with this amendment are hereby repealed."

The presentation of the report was followed by warm discussion, but with the exception of the part relating to nominations for officers, the report was accepted.

The committee appointed for the purpose of securing the appointment of a Secretary of Public Health, who shall be a member of the Cabinet of the President of the United States, reported progress.

Second Day—June 8th.

The report of the Judicial Council was received. It decided against the legality of Dr. W. W. Potter, of Buffalo, N. Y., acting as a member of the Board of Trustees. The Council claimed that Dr. Potter was ineligible on account of his connection with the New York State Medical Society. Heated discussion followed. A motion was finally made and almost unanimously carried, to appoint a committee of five to confer with a committee of five from the New York State Medical Society to determine on what conditions the late division can be bridged. In the meantime, the permanent members from the New York Society remain in good standing in the Association.

The Committee on the Pan-American Medical Congress reported progress, stating that the outlook is encouraging. The Senate of the United States had unanimously passed the following, introduced by the Hon. John Sherman:

"Joint resolution: To authorize the President to invite certain governments to send delegates to the Pan-American Medical Congress. Resolved, by the Senate and House of Representatives of the United States of America, in Congress assembled, that the President of the United States be and he is hereby authorized and requested to invite the several governments of the republics of Mexico, Central and South America, Haiti, San Domingo, and the kingdom of Hawaii to send official delegates to the meeting of the Pan-American Medical Congress to be held in the City of Washington, September 5, 6, 7, and 8, A. D. 1893."

The Committee on Amendments to the Constitution and By-laws reported as follows: "The President is hereby requested to appoint a committee of five to whom the Code of Ethics of this Association shall be referred for such changes or amendments as they may deem wise to recommend, if they should decide that any change is required."

Dr. John B. Hamilton, of Chicago, delivered the Address in Surgery. He took for his subject the "General Principles of the Surgery of the Human Brain and its Envelops." He noted that although trephining had been employed from earliest times, and the dura mater had been incised by the older surgeons, the brain itself had seldom been touched.

He traced the various procedures that have been employed in operations upon the head. He could see no reason for the invention of the phrase, "cerebral localization," as the word "diagnosis" seems sufficient. The diagnosis of injuries, abscesses, and tumors of the brain, is more or less difficult, according to the extent of the injury. Lesions in certain situations are unattended

with symptoms upon which a diagnosis can be confidently made, so that the history and the complex of phenomena must be relied upon. Subdural abscesses frequently present negative symptoms. In the case of pistol-shot wounds of the brain, the difficulty of diagnosis is increased by the conflicting and perplexing character of the symptoms. Such a result is obvious, when it is reflected that, whatever the location of the missile at the time of the examination, the symptoms must likewise be those of the lesion occasioned by the passage of the bullet.

The diagnosis of lesions of the motor area, of the centers of articulate language, and of the sensory cortical centers, is now well defined, but that of lesions of the central ganglia is yet in an uncertain state. The motor cortical area has been subdivided into minute areas, each governing certain movements. The use of the ophthalmoscope in cerebral diagnosis has come to be essential. Optic neuritis and choked disc are found in most cases in which tumors are present. The size of the tumor does not seem to increase or diminish the intensity of the lesion of the optic nerve.

Oppenheim has recently observed rhythmic contractions of the veil of the palate and of the vocal bands, as well as of the muscles supplied by the inferior branches of the facial nerve, in association with lesions in the occipital fossæ. There were, besides, cephalalgia, dysphagia, vomiting, paresis, and contracture of one side of the face, without alteration of the electric reaction.

Benjamin Ward Richardson has proposed the practice of cranial auscultation as an aid to diagnosis in the study of intra-cranial disease.

Great progress has been made in the treatment of cerebral abscess. While in some cases the result of surgical interference is necessarily fatal, a number of cases have been reported in which the ultimate issue has been entirely successful. It is now acknowledged, even by the most conservative, that consecutive abscesses require additional trephining. In all cases of ethmoidal abscess, abscesses of the frontal sinuses and of the mastoid processes, the further extension of the disease should be prevented by free drainage.

In connection with cerebral injuries, the result most to be feared is the formation of an abscess, which may follow a fissure almost as readily as a fracture.

Ashhurst has recommended that in removing spicules or fragments of bone, in cases of fracture of the skull, the fragments should not be torn away with forceps, but, if necessary, carefully separated from the dura with the knife.

Wyeth has advised that if, in the case of a pistol-shot wound of the brain, the ball has passed beyond reach, the patient should be kept quiet long enough to allow the bullet to become encysted, as otherwise it might be displaced, from the slight resistance offered by the brain-substance. Numerous cases have been recorded in which operations upon the skull for fracture and for intra-cranial hemorrhage have been attended with successful results. The results from operation for the relief of cerebral tumor have not been so good. The subject of cerebral injuries in the newborn, due to pressure on the head in passing through the pelvis of the mother and to artificial delivery by the forceps, has received considerable attention, but the results of operative interference have thus far been negative.

Sufficient time has not yet elapsed to determine the ultimate value of the operation of craniotomy.

Mr. Tuke has recommended the operation of spinal laminectomy as the ideal surgical procedure for the relief of pressure due to intra-cranial collections of fluid.

In a number of cases, trephining has been performed in the hope of relieving mental disease. Trephining has also been performed in a number of cases of epilepsy, but the results are far from satisfying one as to the propriety of continuing the operation. It may be that by a careful selection of cases, and by the employment of the electric current when the convolutions are exposed, better results may be accomplished.

In a given case, a patient cannot be said to be cured until five years have elapsed after the operation. It has been admitted that traumatic epilepsy is practically incurable by surgical operation, and that a considerable number of such cases had better have been relegated to the domain of medicine. The view has been forcibly expressed that traumatic epilepsy should be prevented.

In Jacksonian epilepsy the presumption is against thorough cure as a result of operation.

The Nominating Committee recommends DR. HUNTER MCGUIRE, of Richmond, Va., for President, and Milwaukee as the next meeting-place.

SECTION ON SURGERY AND ANATOMY.

FIRST DAY—JUNE 7TH.

The Chairman, Dr. J. MCFADDEN GASTON, of Atlanta, Ga., read an address entitled "Surgery of the Gall-bladder and Ducts." (See p. 651.)

DR. W. H. MYERS, of Fort Wayne, Ind., read a paper entitled "Obstruction of the Cystic Duct, with a Case," in which he detailed the symptoms and effects of obstruction of the cystic duct. He called attention to the fact that for some reason, in some instances the gall-bladder undergoes immense dilatation, while in other instances it undergoes contraction. In the case reported, operation disclosed the presence of six calculi impacted in the cystic duct. After their removal a fistulous opening remained for several months.

DR. W. E. B. DAVIS, of Rome, Ga., read a paper on "Peritonitis from Gall-stones," in the course of which he stated that the bile is not a septic fluid, and consequently the inflammation to which it gives rise will be like that resulting from the irritation of any chemical agent. A limited quantity of bile that finds its way into the peritoneal cavity may be absorbed. If slowly exuded, it is confined by the protective adhesions that form, but the resultant irritation renders the peritoneum more susceptible to septic influences. Iodoform-gauze has proved useful as a means of draining bile from the abdominal cavity. Properly adjusted about the gall-bladder and the ducts, it will certainly protect the abdominal cavity from contamination. The danger of peritonitis as a complication of gall-stones is probably greater than one would be led to believe from experiments on animals.

In opening the discussion upon the three foregoing papers, DR. A. VANDER VEER, of Albany, N. Y., paid a high tribute of praise to the labors of Dr. Gaston. He reported a case in which an operation was performed for the relief of biliary calculi, with the removal of sixty-four

stones. He does not think surgical interference warranted until medical treatment has been exhausted. The operation of cholecystectomy should be approached with the greatest circumspection.

DR. H. O. MARCY, of Boston, presented three gall-stones removed from a patient operated on *in extremis* as a forlorn hope. Two of the calculi were found in the gall-bladder and one in the cystic duct. The patient recovered. Dr. Marcy does not deem it wise to defer operation too long in the hope that Nature will accomplish that which in our inner consciousness we realize she is unable to do.

DR. F. W. ROSS, of Toronto, stated that mere distention of the gall-bladder does not give rise to pain, while obstruction in the common duct is the more likely to do so. Patients are at times free from pain, although as a result of operation it becomes known that calculi have been present in the biliary channels for long periods of time. Dr. Ross likewise thinks it unwise to defer operation too long, as it has been demonstrated that the operation itself is not dangerous. He related a case in which a fistulous opening was made to close by applications of silver nitrate.

DR. CHRISTIAN FENGER, of Chicago, stated that he prefers cholecystotomy to cholecystectomy, if the former be sufficient to meet the indication.

DR. DUDLEY P. ALLEN, of Cleveland, reported a case in which the patient apparently died from the intensity of the pain.

DR. DAVIS stated that the point he wished to make was the safety of the employment of gauze, by means of which, in conjunction with the use of a drainage-tube, bile and septic fluids are diverted from the peritoneal cavity and permitted to escape, in this way avoiding the complication of peritonitis.

DR. JAMES T. JELKS, of Hot Springs, Arkansas, read a paper entitled "Gunshot Wound of the Liver and Stomach; Laparotomy; Recovery." The case was that of a young man about twenty-nine years old, with a bullet-wound three inches to the left of the spinal column in the dorsal region. He had vomited blood; his pulse was 70. Laparotomy was advised; at first declined, but finally consented to. The operation was performed under most unfavorable circumstances. On opening the abdominal cavity, a small quantity of blood was found, but no wound of the stomach could be discovered. A large bullet-hole was found on the posterior aspect of the liver, the bullet lying free in the abdominal cavity. After the removal of foreign matter, the abdominal cavity was cleansed, and a drainage-tube, wrapped with iodoform-gauze, was placed in the wound in the liver and permitted to remain for several days. The patient was for five days nourished by means of nutrient rectal enemata, and made a complete recovery, without complication, except for some abdominal distention as the result of accumulations of gas in the intestine.

DR. CHRISTIAN FENGER, of Chicago, expressed the view that the most important feature in connection with wounds of the liver is undoubtedly the hemorrhage, and this is probably best controlled by means of iodoform-gauze, as ligatures will not hold when applied to the hepatic parenchyma.

DR. GREGORY raised the question as to whether or not the operation was advisable, and expressed the view that many cases of the kind recover without operation.

DR. SAMUEL S. THORN, of Toledo, related a case in which, the patient died from loss of blood, although there was but a small laceration of the liver.

DR. J. B. MURDOCH, of Pittsburg, defended the operation on the ground that in cases of the kind reported, a surgeon could not feel that he had done his whole duty if he had not opened the abdominal cavity and assured himself of the condition of affairs.

DR. GREGORY stated that he did not wish to be understood as having objected to the operation, and thought that he might have been betrayed into its performance and subsequently not have regretted his action. He thought, however, that were the bullet left behind, it would have done less harm than the operation.

DR. JNO. H. MCINTYRE, of St. Louis, thought that a ball rolling about in the abdominal cavity would not be likely to become encysted and was better removed.

DR. JENKS maintained that if any other surgeon had been sent for in the case he would most likely have made a diagnosis of gunshot wound of the stomach. In that case it would have been his duty to have advised an operation, and if this were acceded to, it must have been done. Statistics show that death takes place in 63 per cent. of cases in which the liver is wounded.

DR. B. S. CAMPBELL, of Detroit, read a report of "Eight Cases of Esophageal Stricture," in the course of which he stated that until recently galvanism as a therapeutic procedure has been considered dangerous when applied to the esophagus, but rapid strides in this direction have been made, and numerous successful cases from the employment of electrolysis have lately been reported. Dr. Campbell reported at length the histories of eight cases satisfactorily treated by means of galvanism. He had never been able to obtain permanently good results in organic stricture treated by this method. He does not consider forcible dilatation a commendable procedure, as the irritation to which it may give rise often does more harm than good. Internal esophagotomy would be safer if the seat of stricture would be accurately located.

DR. ROBERT NEWMAN, of New York, expressed the view that strictures of the esophagus are caused, as a rule, either by the swallowing of strong acids or alkalies, or by malignant disease. Nothing of which he had heard had, to his knowledge, ever cured a stricture of the esophagus except electrolysis.

DR. J. D. GRIFFITH, of Kansas City, expressed a desire to know if Dr. Campbell had ever employed electrolysis in children. He had himself seen several such cases, in one of which the narrowing resulted from the swallowing of concentrated lye. In this case he had found operation exceedingly difficult, owing to the struggles of the patient.

In reply, DR. CAMPBELL stated that he had seen but one case in a child, and in that electrolysis had not been employed.

SECOND DAY—JUNE 8TH.

Morning Session.

DR. DUDLEY P. ALLEN, of Cleveland, read a paper entitled "The Late Manifestations of Appendicitis and their Treatment." A consideration of the primary mani-

festations of appendicitis was not presented on account of the full consideration that such cases have received. For the purpose of illustrating the subject, six cases were selected presenting various manifestations of the disease. The first case was that of a young man who had suffered from repeated attacks of what he supposed to be colic; the attack that led to the operation had not, in its beginning, differed from preceding attacks. After a few days, however, a well-marked abscess developed in the region of the cecum; this was opened and the appendix removed. The second case was that of a woman who, in a period of twelve days, developed an abscess occupying the right lumbar region, extending from the ribs to Poupart's ligament, and containing perhaps two quarts of pus, with masses of gangrenous tissue. The third case was that of a man who developed an abscess located in the region of the cecum, for which he was operated upon, and from which he seemingly recovered. A few months later, an abundant dischage of pus, having the appearance and color of anchovy sauce, took place from the lung; this discharge, together with the results obtained on percussion, rendered it probable that an abscess had been developed in the liver and was emptying itself through one of the bronchi. The fourth case was that of a young man who had suffered from repeated attacks of pain in the region of the cecum during twelve years. A slight point of induration was discovered in the right iliac region. Operation was performed, to the entire relief of the patient, although a small fistula still remained. The fifth case was that of a young man who, five months previously had had an attack of appendicitis. Though no abscess had developed, so far as had been observed, there was some induration in the right side of the abdomen, and the patient was strongly bent over to the right side, the evidence being that the psoas muscle of that side was involved in the inflammatory process. The case was operated on and a small concretion was removed; the patient recovered. The sixth case was one in which the diagnosis of appendicitis was made, and the patient was removed to the hospital for the purpose of consultation and operation. A cessation of the pain threw the diagnosis into doubt, and no operation was performed. Some dulness at the base of the right lung developed, together with profuse expectoration, and the suspicion arose that the difficulty was tuberculous. Later, however, abscesses formed in the right thigh, and after a thorough study of the case it became evident that it had primarily been one of appendicitis.

Dr. Allen advocated that in recurrent cases of the sort mentioned, operation should be performed for their relief; while recognizing the dangers of such operations, which must at times open the abdominal cavity, it was held that the danger of operation was vastly less than that of delay. The advantages of the extra-peritoneal method of operation were discussed, as compared with methods in which the abdominal cavity was opened; while the advantages of the former are great, there are certain cases in which the point of disease could be reached by no method but the trans-peritoneal. While one hesitated as to operating upon a case of perityphlitis in the quiescent condition, it was held that should the disease frequently recur the dangers of operation were less than those of delay.

DR. R. H. MUDD, of St. Louis, was absent and his paper on "Acute Intestinal Obstruction, and the Use of Saline Cathartics for Diagnostic Purposes," was read by title. He contended that in some cases of intestinal obstruction there is legitimate reason for the most skilled diagnostician to be in doubt.

The differential diagnosis ordinarily rests between colic, peritonitis, and obstruction. Laparotomy is accepted as the most reliable therapeutic measure for the relief of intestinal obstruction.

To be a useful therapeutic agent laparotomy must be performed early in the course of the obstruction. It was proposed that in doubtful cases saline cathartics be employed to establish a positive diagnosis in time to act efficiently and save the patient.

Saline cathartics purge cases of colic, which are then curable by a sedative; they may arrest peritonitis; they develop and make plain the more serious condition of mechanical obstruction. If given early in the case, the distress and aggravation of the symptoms that they occasion will subside under the use of morphine, and the general condition will then permit of operative relief.

It is only in cases in which the doubt is sufficiently strong to control action that the saline purgative is used. It should be given promptly. The time for its efficient administration is in the lull, or quiet, induced by the first dose of morphine. It may again arouse ineffective and painful peristalsis, but in many cases it will resolve doubt and determine surgical interference, when it is still possible to save the patient.

The decision is to be made whether, in a doubtful case, presented within forty-eight hours of the onset of the trouble, the surgeon should wait and let time resolve the doubt and destroy the patient, or if an exploratory laparotomy is to be performed on a patient who does not need it. The purgative may afford the third and safest method of solving the doubt.

DR. NICHOLAS SENN, of Chicago, presented "A Clinical Contribution to the Operative Treatment of Acute Intestinal Obstruction," which he stated he desired to make a sequence of the papers on the "Surgery of the Gall-bladder and Ducts," read on the previous day. He contended that it is not always as easy to determine that the biliary apparatus is affected as the papers previously read might lead one to believe. Dr. Senn related a case presenting all of the appearances of chronic gastric catarrh, with dilatation of the stomach. Very careful examination raised a doubt that the case was one of pyloric stenosis, due to cicatricial contraction. When a median laparotomy was performed, enormously firm adhesions were found in the vicinity of the pylorus, but no evidence of cicatricial contraction of the stomach. The walls of the gall-bladder were thickened and the viscus was imbedded in cicatricial tissue. Examination detected a gall-stone, about the size of a walnut. This was removed and the patient recovered with immediate relief of the gastric symptoms.

In another case, the patient had suffered for several years with symptoms that might have been construed as indicative of the presence of gall-stones. On operation, the intestines were found enormously distended and congested and containing a gall-stone twenty inches above the ileo-cecal valve. Dr. Senn expressed the belief that large gall-stones seldom or never reach the intestine

through the duct, but that they ulcerated their way through from the gall-bladder to the intestine. In the last two years he has operated upon four cases of dermoid tumor of the abdominal wall. All of the cases were in women that had borne children. These tumors resemble fibromata, but microscopically present, besides, some of the elements of sarcomata. A large tumor was exhibited that had only been noticed four months before operation, its rapid growth indicating its malignancy. Dr. Senn called attention to the differential diagnosis between intra-mural and extra-mural tumors. The former are, as a rule, covered by nothing but the skin and the fatty cushion under the skin. One of the great difficulties in removing these dermoid tumors resides in the intimate attachment of the peritoneum to the tumor. As the result of operation, a large gap is left in the abdominal wall, the muscles of which have already been atrophied by the pressure of the tumor. Dr. Senn therefore utilizes the omentum and borrows from the adjoining muscles on account of the great difficulty of closing the opening.

DR. JOSEPH PRICE, of Philadelphia, read a paper on "Intestinal Lesions in Abdominal Surgery," which is to appear in a subsequent number of THE MEDICAL NEWS.

DR. GREGORY made a motion that the references to Dr. Mundé contained therein be expunged. This called forth a heated discussion.

DR. PRICE maintained that all published writings are on record and are for public use.

DR. L. S. MCMURTRY said that he did not think any discourtesy was intended to Dr. Mundé, and he thought the motion of Dr. Gregory would be construed as a criticism of Dr. Price.

DR. BISHOP expressed the opinion that, if carried, such a motion as Dr. Gregory's would considerably impair the usefulness of the American Medical Association.

DR. PRICE re-read the portion of his paper referring to Dr. Mundé, and after some further discussion Dr. Gregory's motion was voted upon and lost.

Afternoon Session.

DR. J. M. MATHEWS, of Louisville, had neglected to bring his paper on "The Comparative Merits of Inguinal and Lumbar Colotomy" with him, but made a few remarks from memory. While the inguinal operation has largely supplanted the lumbar, he preferred the latter. The advocates of the inguinal method claimed that it is the more easily performed. If this is true, we should prefer it; but do statistics show this? Looked at in an anatomic light, it does not seem any simpler. The lumbar operation is extra-peritoneal and the inguinal intra-peritoneal, though it is claimed that in the former we cut into the peritoneum oftener than we think. Some would claim that going into the peritoneum is little to be feared. Granting that, if two operations will give the same results, one with and the other without entering the peritoneal cavity, is not the latter preferable? Secondly, in performing the operation in the iliac region, we are dealing with a diseased condition; we are cutting into the peritoneum for carcinoma of the rectum or sigmoid flexure. Thirdly, in some cases the mesentery here is very short and we cannot accomplish the operation we started out to do. In performing the lumbar operation, this is not the case. Carcinoma of the sigmoid flexure may exist and progress to a fatal issue without a positive diagnosis having been made.

DR. J. D. S. DAVIS, of Birmingham, Ala., was absent and his paper on "A Comparative Test of Anastomotic Devices," was read by title.

DR. J. SCHNECK, of Mt. Carmel, Ill., read a paper on "The Treatment of Injuries of the Abdomen not requiring Surgical Operations." He divided the abdominal injuries not requiring surgical interference into two classes: those involving the parietes only and those in which the integument is unbroken, but some of the internal viscera are injured. The most serious effects may follow even what seem to be simple injuries of the abdomen. One of the great sources of danger is shock following injury to the nerves of the cavity. Injuries above the umbilicus are more fatal than those below. As the surgeon usually finds the patient in a state of depression and shock, immediate means of relief should be employed. This is often and quickly accomplished by rectal injections of hot water, with the twofold idea of emptying the bowel and acting on the solar plexus. Several cases illustrating the efficacy of the treatment outlined were related. Dr. Schneck thinks that all injuries of the abdomen should be considered very serious and a guarded prognosis given.

DR. MORDECAI PRICE, of Philadelphia, and DR. JOHN WYETH, of New York, were absent. Their papers, on "Emergency Work in Abdominal Surgery," and "The Present Status of the Surgery of the Vermiform Appendix," respectively, were read by title.

DR. W. B. DEGARMO, of New York, read a paper entitled "A Few Points on the Management of Strangulated Hernia." He stated that the death-rate from strangulated hernia has not diminished as it should have done in the face of modern surgery, owing probably to a fear of touching anything relating to the peritoneal cavity. The object of the paper was to emphasize a few points and to dissipate some false ideas as to the management of these cases. Many a sufferer from strangulation has been sacrificed to the hypodermatic needle. Much valuable time may be lost in trying different remedies, and more harm done than good. Evidence is strong in favor of the local application of sulphuric ether, about a tablespoonful poured over the tumor every fifteen minutes; but this treatment should not be continued for too long a time. The great difficulty is to decide when to operate; undoubtedly many lives are sacrificed by delay. Amputation of the omentum adds much to the danger: first, from secondary hemorrhage; secondly, from sepsis. Careful ligature of the vessels of the omental stump will obviate the first, and the second is no longer very important to careful operators.

DR. JOS. RANSOHOFF, of Cincinnati, read an interesting and valuable paper on the "Management of Gangrenous Hernia, with Report of Four Cases," in one of which fourteen inches of the gut was removed, primary union and uninterrupted recovery following.

DR. H. O. MARCY, of Boston, opened the discussion by paying a high compliment to Dr. Ransohoff. Sometimes he thought that we had too many operators, or rather too many attempting to operate who had not had the proper training. He thought it a part of every physician's duty to know how to operate on a strangu-

lated hernia. He considered inguinal hernia in the male as the most difficult of treatment and cure. Three centuries ago these hernias were cured by sacrificing the testicle. At the present day, by careful operating, we are able to obviate the necessity of drainage and to seal the wound with iodoform-gauze; and if the wound is aseptic, we may be assured that it will remain so. This is a great advantage in operations on children, who soon soil the ordinary dressings.

DR. D. A. WATSON, of Jersey City, discussed the papers read in the morning, advocating conservative and aseptic surgery.

The following were elected officers of the Section for the ensuing year: Dr. James T. Jelks, of Hot Springs, Ark., *President;* Dr. Ernest T. Tappey, of Detroit, Mich., *Vice-President;* and Dr. Montgomery, of Chicago, *Secretary.*

SECTION ON PRACTICE OF MEDICINE.

FIRST DAY—JUNE 7TH.

In the absence of the Chairman, DR. ROBERT T. EDES, of Jamaica Plains, Mass., DR. ATKINSON, of Baltimore, was unanimously chosen Chairman *pro tempore.* The address of DR. EDES on "The Relations of Bacterio-chemical Results to Prophylaxis and Therapeutics" was read by DR. GERRY. He endeavored to show that bacteriology gives a more clear definition of many facts heretofore vaguely and indistinctly recognized. Two kinds of immunity to infectious disease can be recognized. The one is specific, like that conferred by one attack of an exanthem to another attack of the same kind, or that conferred by vaccinia to variola, or in the lower animals conferred by certain artificially attenuated poisons to the natural infection. The second form of immunity is general, and is attained by improving the nutrition of the blood (solid tissues?), possibly by making the leukocytes stronger.

Bacteriology imposes new duties, without diminishing the old. In tuberculosis, for instance, since we cannot as yet (in spite of the admirable work of Koch) confer specific immunity, we must endeavor to produce the greatest possible degree of general immunity by bringing the nutrition to its highest point, and to prevent infection by the avoidance of impure air and all tuberculous contact. Specific therapeusis by means of drugs is not in a much more hopeful condition now than it was before the doctrine of auto-intoxication had become so prominent, and covered so much ground.

Quinine and the salicylates, however, still remain as types of specific medication. The old clinical reputation of quinine has been upheld and fortified by the observation of the disappearance of specific malarial organisms under its use.

The increase in opportunities for laboratory work in biology in this country is a matter for congratulation, and the desirability of the clinician setting as high a standard as possible for accurate observation must be insisted on.

In the discussion, Dr. D. E. KINSMAN, of Columbus, Ohio, referred to the vital interest surrounding the subject of immunity. He dwelt upon the difference between immunity and absolute protection. The latter is perhaps not attainable. He detailed experiments that he had carried out, showing that comparative immunity is attainable, and that attenuation to one-sixth of the original strength could be secured by successive cultivation in urine of the bacilli of hog-cholera.

DR. W. J. SCOTT, of Cleveland, Ohio, stated that it is of importance to ascertain whether it is the bacillus or its products that are employed in experiments.

DR. CHARLES DENISON, of Denver, Col., expressed regret that Dr. Edes implied that tuberculin as a therapeutic agent is a failure, because in a letter recently received, Dr. Edes expressed his great faith in the remedy. From his own use of it, during the past fifteen months, Dr. Denison believes that it will prove brilliantly successful. As a result of his experience he has determined some of the rules and limitations for its employment, the observance of which will render the use of tuberculin practically safe. It must be borne in mind that there is in the human system something antagonistic to such poisons as that of tetanus, diphtheria, typhus, etc.

DR. S. P. KRAMER, of Cincinnati, stated that in the production of immunity, two methods have been principally pursued. The one is that of the employment of attenuated cultures, as developed by Chauveau and Pasteur. The second is the method by which an albumin derived from the body of the germ is utilized. This, when brought in contact with certain principles contained within the animal organism, produces a body that neutralizes the toxic principle and reduces the pathogenic germ to the level of an ordinary saprophytic germ. In the first form, the antitoxin is formed by the growth of the germ within the body; in the second by the growth of the germ in the test-tube. The first method, which may be called serum-therapy, has been credited with the cure of six cases of tetanus.

DR. R. FRENCH STONE, of Indianapolis, read a paper on the "Etiology of Specific Disease." Less than twenty-five diseases, he stated, are classed as specific. The proximate causes are not known. He described the condition of the body that facilitates the entrance of infectious agents, particularly the state of the alimentary canal. There are numerous theories as to the cause of specific disease. Beale's view of infection by transplantation of diseased bioplasm contains an element of truth. All infective agents require an excess of nitrogenous matter in the blood. The microphyte theory may be regarded as the correct one.

DR. S. P. KRAMER, of Cincinnati, read a report of "Recent Investigations of the Etiology of Diabetes Mellitus." He stated that, according to Senator, a pathologic change in the pancreas occurs in about half of the cases of diabetes mellitus. Complete excision of the pancreas has invariably been followed by the development of true diabetes mellitus. Partial obliteration, however, is not attended with the same result. Bull has reported a case confirmatory of this view. It has been found that transplantation of pieces of pancreas in dogs that have been subjected to excision of the pancreas prevented the development of diabetes. Dr. Kramer arrives at the conclusion that in the normal condition, the pancreas gives rise to the production of a principle, as a result of the circulation of which in the general blood-current the dextrose absorbed is so modified that its combustion within the organism is rendered possible. With the removal of the function of the pancreas, this

change does not take place. The sugar is not utilized, but is eliminated in the urine.

DR. GEO. E. FELL, of Cincinnati, stated that in a case of abscess of the liver the patient had diabetes until the abscess ruptured, but the glycosuria ceased with the evacuation of the abscess into the bowel.

DR. S. SOLIS-COHEN, of Philadelphia, referred to the subdivision by Lancereaux of diabetics into thin and fat. In the lean cases lesions of the pancreas are commonly found; but not in the fat cases. Cases are, however, found in families, some members of which have gout, others diabetes, and still others pulmonary tuberculosis.

DR. JOHN E. LINK, of Terre Haute, Ind., read a paper on "La Grippe," in which he expressed the view that influenza is dependent upon a depressing influence that acts especially upon the central cells of the medulla, and possibly also upon those of the cord. The pneumonia that is so commonly present as a complication is not a true lobar inflammation, but rather a congestion, of nervous origin. The continuous coughing is not the cause of the vomiting. The process seems rather to be a paresis of the pneumogastric nerve and of the sympathetic system. The heart and other viscera are affected in a like manner. A case of acute edema of the lungs in a patient suffering from influenza was referred to. Dr. Link stated that he had carefully observed a number of similar cases. In another case of influenza, acute tachycardia developed, the pulse rising in frequency to 200 beats in a minute.

DR. JOHN H. HOLLISTER, of Chicago, Ill., read a paper entitled "A Modified Form of Continued Fever following the Epidemic La Grippe." He stated that in the month of May, 1891, he had in a considerable number of cases observed a type of continued fever that was not confined to a special class or locality, and for which no cause could be determined. By August the manifestation had disappeared. It was suggestive of typhoid fever, from which it differed, however, in many important respects. An analysis of fifty cases showed that the prodromata lasted from one to four days. Extreme muscular soreness was the symptom most commonly complained of. The onset was gradual and without chill. The average duration of the disease was twenty-three and one-quarter days. The temperature range was high and continuous. There was usually but a moderate demand for liquids. Nervous symptoms were not conspicuous, except for the depression. The mind was not disturbed. There was neither subsultus nor other symptom of ataxic typhoid fever. In four cases there was profuse perspiration. The digestive system showed little disturbance. The tongue was not brown or dry. The dorsum was clean and white as though brushed with white paint. Emaciation was rapid. Epigastric pain was only moderate. There was no peritonitis. The bowels were usually constipated. Typhoid bacilli were not found in the stools. There was a notable tendency to relapse, generally induced by indiscretion in diet. Only three cases terminated fatally: one from pneumonia, and two from exhaustion. There were no intestinal lesions. The urinary color-test of Ehrlich was not employed. Eruptions were absent. The face was strikingly pallid, instead of presenting the dull, heavy aspect of typhoid fever.

DR. HEMENWAY, of Illinois, expressed the opinion that influenza primarily presented the manifestations of an intoxication, probably dependent upon microbic invasion, and that the nervous manifestations represented the effects of the poison. Only in this way can the fatty degeneration of the heart be explained. In the cases reported, the fever must be attributed to the activity of some ptomaïne. Dr. Hemenway had found that if an energetic dose of calomel was administered, there was rarely occasion to see the patient twice. Fever is most likely to be kept up in patients that have taken antipyretics, particularly acetanilide.

DR. N. S. DAVIS, of Chicago, expressed the view that the manifestations of the disease were those of one of nervous origin. He regards the disease as contagious.

SECOND DAY—JUNE 8TH.

Morning Session.

DR. BEDFORD BROWN, of Alexandria, Va., read a paper entitled "Positive and Negative Medication." He stated that in the administration of remedies the effect must be positive or negative, the results good or bad. To secure the proper effects, the solubility of medicine must be considered. The pill is the most insoluble of pharmaceutic preparations; stale sugar-coated pills are the worst. The best excipient is glycerin. In cases of high temperature the stomach loses its power to dissolve pills, and solutions only should be given. This refers especially to the administration of quinine in malarial fevers. The cool bath promotes the preservation of the digestive functions. Dr. Brown illustrated by cases the incapacity of the stomach in certain diseased conditions even to digest food; hence, in such cases the effects of pills given would be negative. Again, negative results are owing to adulteration of drugs. For this physicians are in part responsible, by purchasing poor drugs because they are cheap. A third cause of negative results is the use of vaunted but valueless patent medicines in uterine diseases. Further, it is important that infusions should be properly made from the fresh drug, and not from stale extracts.

DR. DIDAMA, of New York, stated that he thought that the use of the tablet-triturates was generally followed by good results. Powders in wafer are also readily dissolved.

DR. WILSON, of Kansas City, stated that negative results in medication are often of value in teaching the physician that success lies in the dispensing of one's own medicines.

DR. HERRICK, of Cleveland, stated that the dispensation of one's own remedies is the proper procedure. It not only leads to surer results, but it tends to overcome the unpalatability of remedies.

DR. H. J. HERRICK, of Cleveland, read a paper on "The Relative Interdependence of Organs in Health and Disease." He has arranged the organs in three groups, according to their mutual dependence. The first group consists of osseous, connective, and cellular tissues. The second group consists of the circulatory, muscular, nervous, and reproductive systems. The third group consists of the organs of secretion, digestion, absorption, assimilation, and excretion. Dr. Herrick regards the organs of the third group as the first in the order of

those that are essential to the health of the others. He thinks that if the food could be adjusted to the special requirements of the case, a large part of the disease of the world could be eliminated. All medication should be directed to the regulation of the physiologic processes. As yet antidotes to specific diseases are undiscovered, but there is in the human body itself, in the white blood-cell, in the spleen and liver, an agency destructive of noxious agents. Hence attention should be directed to these organs and not solely to the exclusion of germs from the body.

DR. E. P. GERRY, of Jamaica Plains, Mass., read a "Report of a Case of Amebic Dysentery." He took occasion to say that the specific ameba is the ameba dysenteriæ—not the ameba coli. It causes a special disease, a special form of dysentery. An illustrative case was described in detail.

DR. J. H. MUSSER, of Philadelphia, stated that he was especially interested to learn that this form of dysentery should occur so far north, although Councilman has reported a case occurring in Canada.

DR. WALTER S. CHRISTOPHER, of Chicago, read a paper on "Retained Feces." He stated that recent investigations in France indicate that the ameba coli commune is responsible for cases of appendicitis and perityphlitic abscess. Destruction of noxious substances in the liver in many cases prevents the development of stercoremia. The symptoms of this condition are usually headache and depression. An ordinary bilious attack is commonly a result; so may anemia or fever be a result. Cases illustrating the phases of disease caused by the absorption of poisonous substances due to retained feces were related. A case of Dr. Moyer's, in which confusional insanity was attributed to stercoremia, was detailed at length. Recovery followed repeated rectal injections. An important matter in treatment is that rectal injections must be repeated, sometimes for weeks.

DR. N. S. DAVIS, JR., of Chicago, called attention to the fact that feces may be retained, though the bowels move daily. The most common symptoms are mental depression, backache, and some anemia.

DR. FULLER, of Massachusetts, referred to a case in which repeated attacks of retained feces were found after death to be associated with contractions of the colon.

DR. NEWCOMB, of New York, referred to a fatal case of supposed acute meningitis, in which no post-mortem explanation could be offered for the symptoms except a colon distended with feces.

DR. J. M. ANDERS, of Philadelphia, thought that in a certain number of cases a catarrhal condition was developed from the constipation, and the catarrh becomes responsible for the anemia.

DR. S. SOLIS-COHEN, of Philadelphia, referred to a case of laryngeal ulceration, in which a diagnosis of stercoremia was made, and treatment resulted in cure. In another case a diagnosis of pneumonia had been made, but the condition was one of retained feces. Again, renal colic has been mistaken for retained feces.

DR. CHRISTOPHER, in closing the discussion, called attention to the fact that hot-water injections have proved very soothing and have given more relief than other remedies in renal and intestinal colic.

Afternoon Session.

DR. LEWIS M. DAVIS read a paper entitled "Transmission and Behavior of Typhoid Poison as Observed in Country Practice." He expressed the belief that water is the common vehicle of transmission of the typhoid poison, but he thinks that the infection is also carried by the air. The disease is contagious. In illustration of this statement, he reported a local epidemic of fourteen cases that developed in those that nursed or were in attendance upon the first case. The infection in the first case occurred at a point distant from that at which the epidemic occurred.

DR. CHAPLIN, of Michigan, reported a similar set of cases of typhoid fever.

DR. J. H. MUSSER, of Philadelphia, stated that the relations of the first with the subsequent cases should be marked out. In the Plymouth epidemic infection occurred by percolation of the feces of the first case into the water-supply at the head of the stream.

DR. HAROLD N. MOYER, of Chicago, read a paper on "Catarrhal Gastritis." (See p. 645.)

DR. STOCKTON, of Buffalo, stated that the subject of lavage is largely misapprehended. Its value is greater in diagnosis than in treatment. The question must be settled first whether or not there is excess of hydrochloric acid. Before this question is decided a suitable diet cannot be recommended. Hence the tube is most valuable as an aid in diagnosis and as an indication of the diet to be prescribed.

DR. DALAND stated that frequently in these cases of chronic catarrhal gastritis there is at least apparently complete absence of hydrochloric acid. The tube is a more valuable adjunct than it is at present believed to be.

DR. SCOTT, of Cleveland, stated that he had used the stomach-tube with advantage. Hyperacidity may depend upon an excess of hydrochloric acid or of acetic acid. Anti-ferments will do more good than pepsin if the excess of acidity be the result of fermentation. By the use of the tube one is enabled to make an accurate diagnosis, and to adopt suitable treatment.

DR. PORTER, of Michigan, called attention to the great frequency of gastritis, and predicted that in the near future we shall have special departments devoted to diseases of the stomach. Diet is of more value in the treatment than all medicines.

DR. H. A. HARE, of Philadelphia, called attention to the utility of pepsin and soda, the soda in these cases stimulating the stomach to increased secretion of gastric juice. In the ordinary prescriptions of pepsin and hydrochloric acid, too little of the latter is used. In the majority of cases tonics do more harm than good. The stomach is of less importance than the intestine. Upper-bowel digestion will be facilitated if food is given that will pass readily into the intestine from the stomach. How often should lavage be used? No one can appreciate its disagreeable effects who has not tried it on himself.

DR. N. S. DAVIS, JR., of Chicago, stated that most cases of gastritis are associated with muscular weakness of the organ. Respiratory exercises, such as promote oxygenation of tissue, are healthful; so, also, are remedies to promote intestinal peristalsis.

DR. MOYER said the speakers had not confined themselves to the subject. He had limited his paper to a consideration of the treatment of uncomplicated catarrhal gastritis.

DR. ARCHIBALD CHURCH, of Chicago, read a paper on "The Vertigo of Arterio-sclerosis," which is to appear in a subsequent number of THE MEDICAL NEWS.

In the discussion, DR. W. G. SCOTT, of Cleveland, asked if nitro-glycerin had been found beneficial.

DR. CHURCH replied that its effects had been disappointing.

Dr. N. S. DAVIS, JR., of Chicago, read a paper on "Some Non-valvular Heart-murmurs." He defined as non-valvular heart-murmurs such as are produced in the absence of lesions of the valves. A case was detailed in which a systolic apex-murmur was associated with great dyspnea and chronic nephritis. Embolism of the right arm occurred. At the autopsy, the lesions of chronic nephritis were found. An old clot was adherent to the chordæ tendineæ, preventing accurate closure of the mitral valve. Another case of non-valvular murmur due to heart-clot, and caused by nephritis, was reported. There was, in this case, first a double systolic murmur, and subsequently a single murmur. At the autopsy, there was a dull-white clot in the right ventricle, entwined in the chordæ tendineæ and extending into the pulmonary artery. In a third case, there was a soft apex systolic murmur and dilatation of the heart, with moderate bronchitis. After a long interval, during part of which some improvement took place, the patient grew worse and died. At the autopsy, the valves were found to be normal, but there was chronic pericarditis with a calcified plaque on the pericardium.

DR. O. B. CAMPBELL, of Ovid, Mich., read a paper on "The Importance of Position in Examination for Diseases of the Heart." He stated that all murmurs are louder when the patient is in the recumbent position. This rule holds good in ninety per cent. of cases.

DR. NEWCOMBE, of New York, stated that as an examiner for an industrial insurance company he has met with a number of cases of non-valvular murmurs due to an increased action of the heart.

DR. KENNEDY, of Michigan, stated that in examining boys for the navy, he had discovered murmurs that could not be accounted for except on the theory that they were due to cigarette-smoking. In some cases he had discovered murmurs in the recumbent position which were not audible when the patient was standing.

DR. COUCH, of Kentucky, read a paper on "The Relation of Nutrition to Pathology," in which he expressed the opinion that disease is a process of abnormal nutrition.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

FIRST DAY—JUNE 7TH.

The Chairman, DR. E. E. MONTGOMERY, of Philadelphia, read an address entitled "Some Mooted Points in Obstetrics and Gynecology." (See p. 654.)

DR. T. RIDGWAY BARKER read a paper on "The Relation of the Duration of Gestation to Legitimate Birth." He dwelt especially upon the uncertainty of the duration of gestation. Since fertilization of the ovule is not coincident with insemination, the matter of calculating the date of confinement must necessarily remain uncertain. The variability in the length of the period of gestation is not due simply to the difference in time between conception and the cessation of menstruation, but depends to a considerable degree upon the rapidity of embryonic development. One continually meets women who have been delivered of mature infants after carrying them for only 242 days, while in the case of others the period has lasted some 323 days. The opinion of Duncan, that prolonged gestation was denoted by unduly advanced intra-uterine growth and development, is not tenable, since the rapidity of cell-proliferation is subject to wide differences. To base, therefore, a diagnosis of legitimacy or illegitimacy upon the presence or absence of these changes could not be otherwise than fallacious.

Dr. Barker reported forty-two cases of legitimate gestation marked by great brevity or unusual length. Among these there were three sets of twins—first, two females, gestation lasting 275 days; secondly, male and female, at 265 days; and, thirdly, two females, at 242 days.

The age of the mother seemed to have no determining effect upon the length of the period; for of the forty-two cases, seventeen were over thirty years old and twenty-five under. Of the total number, twenty-seven cases were marked by brevity, the gestation varying from 242 to 274 days, while in the remainder the period lasted from 289 to 323 days. There were twelve cases between 290 and 323 days, and six cases over 300 days. The youngest primipara was fifteen years old; the oldest, fifty-one years old. Of the primiparæ, five had long periods and nine short periods. The minimum was 255 days; the maximum, 323 days. In fifteen cases the placenta was normal; in the others being battledore.

There seems to be a tendency for a certain number of days to repeat themselves; thus, between 254 and 267 there were nineteen cases; furthermore, four of this group were confined on the 265th day, four on the 266th, and two on the 307th day. In considering these great variations in the duration of gestation, can we do otherwise than agree with Jaggard in saying that "the real duration of pregnancy is an unknown quantity?" The question of legitimacy is not to be decided solely by the length of gestation, nor by the size, weight, or development of the fetus, but should represent "the sum of all the circumstances having a direct bearing upon the case."

DR. WILLIAM B. DEWEES, of Salina, Kansas, read a paper entitled "A New Axis-traction Obstetrical Forceps."

The following conclusions were arrived at:

With the patient placed in the left lateral (English) position, obliquely across the bed, with the nates brought to its edge, and by the use of this forceps it is plain:

1. That axis-traction is made perfect, easy, and simple. 2. That axis-traction at the superior strait is perfect and so continues during the entire passage of the fetal head, following the curve of Carus, from the brim to the outlet, with ease and safety. 3. That the axis of the blades of the forceps lies constantly parallel with the axis of the parturient canal as the head descends, thus enabling the accoucheur to fulfil a most important aim in forceps-operations, namely, to deliver with a

minimum amount of force. 4. That the operator is enabled to seize the head more advantageously at the brim; the facility with which the head can be aided to descend in the axis of the superior strait, as well as to follow the axis of the pelvis, would seem scarcely possible to one accustomed to the ordinary forceps. 5. That it is easy of application, and in its triple character, having a moderate head curve, a moderate pelvic curve, and a decided perineal curve (the latter is provided in the handles, which serve for traction), it has all the advantages of axis-traction, with plenty of power and perfect control and with the simplicity of the ordinary forceps. 6. That it does away with the complicated, cumbersome, and expensive attachments of the Tarnier and other models. The indicator is constantly in the sentient hands of the operator, who thus at every moment knows through his *conscience musculaire*, the direction of traction as well as the resistance, thus preserving intelligent observation of the progress of labor, and regulation of the forces employed, which alone can be done by the use of the hands in executing traction and extraction.

DR. JOHN MILTON DUFF, of Pittsburg, read a "Report of Cases of Albuminuria of Pregnancy Treated by Chloroform Internally." His conclusions were that, while the drug increases the flow of urine and causes a diminution in the amount of albumin, its effect is not constant. In some cases, it rather aggravates the condition. It is of benefit, however, in warding off eclampsia.

DR. EDWARD P. DAVIS, of Philadelphia, read a paper on "The Treatment of Posterior Rotation of the Occiput During Labor," which is to appear in a subsequent number of THE MEDICAL NEWS.

SECOND DAY—JUNE 8TH.

Morning Session.

DR. G. I. MCKELWAY, of Philadelphia, read a paper on "Delivery through the Abdominal Walls in Otherwise Impossible Births," which is to appear in a subsequent number of THE MEDICAL NEWS.

In the discussion, DR. E. P. DAVIS, of Philadelphia, urged the importance of diagnosis early in cases of contracted pelvis. He has recently been compelled to perform craniotomy in three cases on account of the neglect of the attending physicians, because of ignorance. He advised craniotomy on living monsters, because hydrocephalic children are often lacking in development in other respects, so that life is impossible or undesirable. He reported an illustrative case.

DR. W. E. ASHTON, of Philadelphia, stated that he would perform Cæsarean section only upon the patient's request. Abdominal operations are dangerous. The induction of premature labor is preferable.

DR. NEWMAN, DR. REED, and DR. WATHEN denounced craniotomy on the living fetus.

DR. ROHÉ urged discrimination in cases.

DR. JENKS advised total extirpation of the uterus in complicated cases.

DR. LAPTHORN SMITH agreed with Dr. Jenks. He would induce labor when possible.

DR. C. HENRI LEONARD, of Detroit, presented a paper entitled "Impairment of the Voice in Female Singers Due to Diseased Sexual Organs." The subject is one to which attention has not been generally called. Female singers have noted a huskiness of the voice at the menstrual periods, and in some cases in which the voice had been failing, the relief of a derangement of the generative apparatus has been followed by improvement in vocal power. The mechanism is probably by an inhibitory influence transmitted from the hypogastric plexus to the pneumogastric, the spinal accessory, the recurrent laryngeal and glossopharyngeal nerves.

The paper of DR. AUGUSTUS P. CLARKE, of Cambridge, Mass., on "The Importance of Surgical Treatment for Laceration of the Cervix Uteri," was read by title.

DR. ELY VAN DE WARKER, of Syracuse, N. Y., read a paper on "Hysterical Mania as a Complication of Gynecological Cases," the full text of which is to be published in the *American Journal of the Medical Sciences*.

He urged proper gynecologic attendance for insane women, stating that 10 per cent. of such inmates of asylums could be improved or cured by suitable gynecologic treatment. Asylum physicians are not usually competent gynecologists. Melancholia is the form of mental trouble most common in diseased women. It is not dangerous to life; few become permanently insane. The hysterical type of dementia is troublesome and persistent. The patient may cause trouble by refusing food after operation. The cases are difficult to influence and are trying for nurses. Traumatic mania may follow etherization and operation. It is not often observed after operation without ether. Such patients cannot be legally controlled in general hospitals, hence restraint by hospital physicians is necessary, although illegal. Dr. Van de Warker urged the appointment of properly qualified men as asylum physicians.

DR. GEORGE H. ROHÉ, of Catonsville, Md., read a paper upon "The Influence of Parturient Lesions of the Uterus and Vagina in the Causation of Puerperal Insanity." Four cases were reported, in each of which there were rupture of the perineum, laceration of the cervix, and morbid conditions of the ovaries and tubes. In all, laparotomy had been performed and the uterine appendages removed. Two of the cases, one of ten weeks' and the other of eighteen months' duration, recovered their normal mental condition after the operation. The other two cases, both of five years' duration, and in a condition of partial dementia, were much improved. The cases are held to justify the following conclusions:

1. Puerperal insanity is, in at least the majority of cases, an infection-psychosis.

2. Without rejecting the influence of other factors, such as heredity, anemia, exhaustion, mental shock and distress, careful observation will show that few cases of puerperal insanity occur without preceding or coincident puerperal infection.

The reasons for this opinion may be briefly summed up as follows:

1. Puerperal insanity occurs in the great majority of cases within the first ten days after delivery—about one-half in the first five days—the same period during which puerperal infection usually occurs.

2. It is usually accompanied by elevation of temperature and other evidences of febrile disturbance.

3. The clinical form in which puerperal insanity man-

ifests itself is, in the majority of cases, that of acute delirious or confusional mania. Depressive states are rare, except as secondary forms. In other words, the most frequent condition is one most closely resembling febrile delirium.

4. The death-rate is much higher than in simple mania. Death occurs from exhaustion, usually with high temperature and rapid pulse.

5. Post-mortem examinations, though infrequent in these cases, have shown grave involvement of the pelvic viscera.

6. Examinations of the pelvic organs during life show lacerations of the perineum and cervix uteri (facile channels of infection in the puerperal woman). As secondary conditions are found intra-pelvic (peritoneal) inflammations and consequent abnormal locations, fixations, and congestions of the uterus, tubes, and ovaries.

7. The results of operations seem to show that removal of local sources of irritation increases the chances of recovery from the mental disease.

DR. D. TOD GILLIAM, of Columbus, O., read a paper entitled "Ventral Hernia Resulting from Abdominal Section." He stated that the safeguards against ventral hernia are the slippery and vaulted parietal peritoneum, which continually shifts the pressure; the fascia; the interwoven commissural fibers; the arrangement of the fibers of three sets of muscles. The factors contributing to the development of ventral hernia are a roughened and sacculated peritoneum concentrating the pressure; scar-tissue, which has not the powers of resistance of normal tissue; and the disturbance of relations of the parietal components.

In long-standing cases, with large and pendulous pouches, the viscera become displaced, the mesentery prolapsed, and the cavity proper contracted. This adds greatly to the difficulties of the operation, because the cavity can no longer accommodate the viscera.

The ideal operation would be to restore a smooth, regular peritoneum and the normal relations of the superimposed structures, to enlarge the cavity and to strengthen the visceral supports. This, as a rule, is impracticable, and the intra-peritoneal operation is fraught with so much danger as not to be practicable.

The operation of cutting down to the fascia on one side of the median line, reflecting it to an equal distance on the opposite side, dissecting up the muscles from the middle line outward in both directions, overlapping and securing them by suture, is full of difficulties, and while offering many advantages over the direct median section, is not likely to come into general use.

The operation of election must be simple, safe, easy of execution, and lasting in its results. A preliminary treatment is necessary to enlarge the cavity, restore the viscera, and strengthen the muscles. This will consist in keeping the patient recumbent, regulating the bowels, massage, the Trendelenburg posture, and the use of remedies to combat flatulence. The utmost care is necessary to secure asepsis, for the efficacy of the operation depends upon the avoidance of suppuration. The operation will consist in an elliptic denudation of an inch or more in width, around the margin of the hernial pouch, and to the depth of the fascia, infolding of the hernial pouch toward the cavity, and a series of layers of buried catgut sutures so as to coaptate the denuded surfaces perfectly. The dressings consist of antiseptic gauze, held in place by strips of adhesive plaster, anchored well down on the sides and tied with tapes over the median line. Over all are placed the cotton pad and flannel bandage.

DR. ANDREW F. CURRIER, of New York, read a paper on "The Causes and Treatment of Sinuses Resulting from Abdominal Section."

He stated that Nature is engaged in a constant effort to protect the body from the results of injury, mechanical or chemic. The ancients recognized this influence in the words *vis medicatrix naturæ*.

Dr. Currier reported the case of a young Irishwoman, who had been operated upon for tuberculous peritonitis, the abdominal wound having been left open for drainage. The parietal surface of the peritoneum remained free, while a wall of new tissue gradually formed over the intestines and omentum, completely isolating them from the parietal peritoneum. The bladder, uterus, and appendages occupied the great sinus thus formed between the layer of new tissue and the abdominal wall. The new tissue was friable, not very vascular, showed little tendency to contract, and was adherent to the parietal peritoneum only at its extreme limits in the flanks. Here, then, was an example on a colossal scale of the sinuses that occur so frequently after abdominal section. Such sinuses may indicate conservative action on the part of the peritoneum. The new tissue, of which they are constituted, is of low organization, but retrogressive changes in it may be incomplete, and result in a persistent opening, with purulent discharges.

The causes of such a condition may be constitutional, irritative, or septic.

Constitutional or predisposing causes are found in cases in which the peritoneum evinces a tendency to throw out excessive secretion. They are present in cases of peritoneal tuberculosis, syphilis, malignant disease of the peritoneum, or disease of any of the abdominal viscera, in which the visceral or peritoneal circulation is seriously interfered with.

Irritative causes may be mechanical or septic, but in the latter variety the irritation may be chemic as well as mechanical. Glass drainage-tubes are chief among irritative agents, especially when very large and retained for too long a time. A sinus thus formed may disappear after the removal of the tube, but it may also remain persistent.

Sinuses may be caused by the irritation of too many or too large ligatures or sutures, or by loosened ligatures around tissues that have shrunk or atrophied. It has been shown that the process may be an aseptic one. To overcome the irritating effects of ligatures, the substitution of the actual cautery, as far as possible, and the removal of the ligatures, securing the pedicle as soon as the danger from hemorrhage is over, have been recommended. Gauze as a means of drainage within the abdominal cavity is probably less irritating than tubes of glass, rubber, bone, or other firm material, and it has been so employed by not a few surgeons.

Sepsis is, as yet, a too obscure cause of sinuses, to admit of exact statement. Sinuses sometimes form when drainage has not been provided for. The ligature may have been aseptic, but blood, pus, serum, or necrotic tissue may act as a focus of irritation; or the peritoneum

may have been unable to absorb or successfully isolate the poisonous material introduced from without. The presence of sinuses may be attended with annoying and often deleterious consequences. The function of the intestines may be interfered with; and there is always the danger to vital organs from prolonged suppuration. Not unusual complications are fistulæ of the bladder and intestine, vesical irritation, nephritis, anemia, and aggravation of preëxisting syphilitic or tuberculous disease. The alternatives in the treatment of sinuses are expectancy, palliative measures, and radical measures. Expectancy is often followed by spontaneous cure. This is the more likely to occur if the nutrition is sustained. Palliative measures are numerous and of varying utility. Thorough cleanliness is a requisite, although often difficult to secure if the sinuses are long and irregular. Various antiseptic solutions, employed as hot as can be comfortably borne, are useful for irrigation. The abdominal opening should be large enough to permit free exit of discharges. Applications of silver nitrate and of trypsin have been made with advantage. The latter will not only digest the cicatricial tissue of the wall of the sinus, but, unless great care is exercised, it will also effect an opening into the intestine or bladder.

In some cases drainage from the abdomen through the vagina has proved efficient, but it has failed in other cases. The removal of an offending pedicle-ligature is not always followed by healing of the sinus.

For obstinate cases, there remains only the radical procedure of re-opening the abdomen, breaking up adhesions, and dissecting away adventitious tissue.

In the discussion, DR. ROHÉ described the difficulties of proper treatment in asylums governed by routine.

DR. EASTMAN and DR. JENKS urged the need of proper consulting boards for asylums.

DR. RICKETTS reported cases of insane women improved by removal of diseased ovaries.

DR. MANTON from extensive observation thought that such patients were improved, but not cured by operation. One case that was under observation for three years was cured. Many such cases are not puerperal in origin.

DR. DAVIS stated that in alcoholic, syphilitic, or neurotic patients, operation often fails. The removal of diseased organs causing irritation in otherwise healthy individuals may succeed.

DR. W. H. WATHEN, of Louisville, read a paper on "The Prevention of Stitch or Mural Abscesses and Ventral Hernia in Laparotomy." He stated that he avoids stitch-abscess by making clean incisions with a sharp knife. He uses no scissors, retractors, or hemostatic forceps. He avoids separating the peritoneum from the wall of the abdomen. He cuts away shreds of tissue in the edges of the incisions. He avoids strangulation by suture. He makes a separate suture for the peritoneum and fascia with kangaroo tendon; then approximates the muscles with silkworm-gut.

In the discussion, DR. JENKS stated that he closes the abdominal incision with one suture, including all the tissues. Traumatism causes most stitch-abscesses and hernias. Dr. Jenks prefers to drain by aseptic gauze.

DR. MCMURTRY maintained that mural abscesses are caused by sepsis. Patients should remain in bed a reasonable time to avoid hernia.

DR. GORDON contended that drainage is rarely needed. He uses a simple suture of silkworm-gut; abscesses rarely result. Sponges constitute septic foci; they should be treated with mercuric chloride before they are used. Needles should be passed from within outward.

DR. EDEBOHLS considers stitch-hole abscess an indication of a septic operation. To avoid ventral hernia he uses chromicized catgut. He unites the deep tissues with buried sutures of silkworm-gut, and sews the superficial fascia and skin with a running, loose catgut suture. He treats ventral hernia by removing an oval flap of skin, folding in the peritoneum, splitting the muscles, and closing the different layers of tissue separately.

DR. WILLIAM E. ASHTON, of Philadelphia, read a paper "On Intestinal Obstruction Following Abdominal and Pelvic Operations," the full text of which is to appear in a subsequent number of THE MEDICAL NEWS.

DR. L. S. MCMURTRY read a paper on "The Influence of Delayed and Incomplete Operations upon Mortality in Pelvic Surgery." He contended that delay in cases of inflammation and in cases of uterine fibroids causes danger, fatal in the case of ruptured tubal pregnancy. Incomplete operations are dangerous because existing disease is aggravated and complicated by the failure to remove the disease. As the knowledge of the dangerous conditions that may be present in the pelvis and abdomen becomes more general and common, family physicians will recognize these conditions early and avoid the danger of delay.

(*To be continued.*)

NEWS ITEMS.

The Medical Society of New Jersey will hold its one hundred and twenty-sixth annual meeting at Atlantic City, N. J., June 28 and 29, 1892.

The President, Dr. Elias J. Marsh, will deliver the annual address, taking for his subject "Longevity."

Dr. J. W. Stickler will read a paper on "Bovine Tuberculosis as Related to Man."

A discussion upon "The True Pathology of Sudden Death in Acute Pneumonia, and the Best Means of Averting it," will be opened by Dr. C. F. J. Lehlbach.

Dr. O. H. Sproul, the third Vice-President, will deliver an address on "Obstetrical Statistics."

Dr. Sidney Strailey will read a paper "The Thymus as Related to Pertussis."

The American Association of Andrology and Syphilology will hold its sixth annual meeting at Richfield Springs, N. Y., June 21 and 22, 1892. The following program has been arranged:

First Day—June 21st.

Discussion on "Prostatectomy," introduced by Dr. William T. Belfield, of Chicago, and participated in by Dr. John P. Bryson, of St. Louis, Dr. William N. Wishard, of Indianapolis, and other members of the Association. In connection with this discussion Dr. Bryson will read a paper entitled "Prostato-myomectomy by the Supra-pubic Route; with a Report of Results Obtained in Eleven Cases." "A New Form of Lithotrite and Aspirator, with Cases Illustrating their Use," by Dr. George Chismore, of San Francisco. "Pelvic Abscess

in the Male," by Dr. William T. Belfield, of Chicago. "The Perfected Electro-urethroscope," by Dr. W. K. Otis, of New York. "A Case of Sacculated Bladder," by Dr. Arthur T. Cabot, of Boston. "Partial Extirpation of the Sound Bladder in the Removal of Neoplasms," by Dr. F. Weir, of New York. "Observations in Regard to the Pathology and Pathological Anatomy of Nodular or Granular Cystitis; Preliminary Paper," by Dr. Samuel Alexander, of New York. "Local Treatment of Cystitis," by Dr. W. K. Otis, of New York. "Retention of Urine; Exhibition of a Catheter for its Relief," by Dr. J. Blake White, of New York.

Second Day—June 22d.

Discussion on "Urethral Fever," introduced by Dr. John P. Bryson, of St. Louis, who who will read a paper in this connection entitled "The Influence of Asepsis and Antisepsis on the Prophylaxis of Urethral as Distinguished from Urinary Fever." Dr. F. Tilden Brown, of New York, will follow with a paper entitled "The Pathology of Urethral Fever." The discussion will be continued by other members of the Association. "The Pigmentary Syphilide," by Dr. Robert W. Taylor, of New York. "The Pathology of Syphilitic Nephritis," by Dr. John A. Fordyce, of New York. "Sexual Hygiene," by Dr. Edward R. Palmer, of Louisville. "Further Report on the Treatment of Gonorrhea," by Dr. W. Frank Glenn, of Nashville. "Practical Points about Recurrent Villous Growth in the Bladder, and its Removal upon Recurrence by the Supra-pubic Route," by Dr. Edward L. Keyes, of New York. "Congenital Deformity of External Female Genitals, Entire Absence of Urethra. Spontaneous Dorsal Dislocation of the Hip as the Result of Efforts to Retain Urine. Correction of Deformity and Restoration of Urethra by Plastic Operation. With some Observations upon the Technique of Ureteral Catheterism," by Dr. Samuel Alexander, of New York. "Unusual Microscopic Bodies Found in the Secretions and Urinary Sediment of a Patient Suffering for Seventeen Years with Urethral Discharge," by Dr. F. Tilden Brown, of New York. "Varicocele and its Radical Cure," by Dr. J. Blake White, of New York. "Failure of Diuretin to Prevent Urethral Fever; a Supplementary Note," by Dr. Edward L. Keyes, of New York. "Operative Treatment for the Relief of Urinary Fistulæ," by Dr. J. Blake White, of New York.

The American Neurological Association will hold its eighteenth annual meeting at the New York Academy of Medicine, June 22, 23, and 24, 1892. The following papers are to be read:

"The Pathology of Paralysis Agitans," by Dr. Charles L. Dana. "Separate Provision for Epileptics, both Public and Private," by Dr. Henry R. Stedman. "A Study of the Sensory and Sensory-motor Disturbances Associated with Insanity from a Biological and Physiological Standpoint," by Dr. H. A. Tomlinson. "Phthisis in its Relation to Insanity and Other Neuroses," by Dr. Thomas J. Mays. "The Successful Management of Inebriety," by Dr. C. H. Hughes. "The Seat of Absinthe Epilepsy," by Dr. Isaac Ott. "On the Extent of the Visual Area of the Cortex in Man, as Deduced from the Study of Laura Bridgman's Brain," by Dr. H. H. Donaldson. "The Criminal Brain; Illustrated by the Brain of a Murderer," by Dr. H. H. Donaldson. "Researches upon the Etiology of Idiopathic Epilepsy," by Dr. C. A. Herter. "Report of Two Cases of Fracture of the Spine in which Operations were Performed for the Relief of Sensory Symptoms," by Dr. Graeme M. Hammond. "Progressive Muscular Atrophy. Presentation of Specimens, with Remarks on the Functions of Certain Cell-groups in the Anterior Horn," by Dr. Graeme M. Hammond. "A Case of Brain Tumor, with Presentation of Specimen," by Dr. Wharton Sinkler. "Report of a Case of Infantile Cerebral Hemiplegia, with Autopsy (Microscopical Preparations by Dr. Warren Coleman)," by Dr. E. D. Fisher. "Report of One Hundred and Sixty Cases of Epilepsy," by Dr. S. G. Webber. "Presentation of a Case of Huntingdon's Chorea; also One of Congenital Huntingdon's Chorea, the First on Record," by Dr. Landon Carter Gray. "A Further Contribution to the Pathology of Arrested Cerebral Development," by Dr. B. Sachs. "A Case of Cerebral Tumor Illustrating the Difficulties of Diagnosis," by Dr. B. Sachs. "Traumatic Nervous Affections," by Dr. Philip Coombs Knapp. "A Note on the Use of Exalgin in Nervous Affections," by Dr. William C. Krauss. "Two Cases of Severe Pressure Neuritis," by Dr. William C. Krauss. "Westphal and his Neurological Work," Dr. W. R. Birdsall. "The Association of Hysterical Trembling and Anorexia Nervosa, with Report of a Case," by Dr. James Hendrie Lloyd. "Sleep Movements of Epilepsy, by Dr. J. W. Putnam. "Diabetes in its Complementary Relations to Certain Forms of Mental Defects," by Dr. E. C. Spitzka. "Imperative Movements Associated with So-called Pseudo-hypertrophic Infantile Palsy, by Dr. E. C. Spitzka. "A New Symptom Indicating Combined Cerebellar and Spinal Incoördination," by Dr. E. C. Spitzka. "The Basis of the Prognosis in the Traumatic Neuroses," by Dr. J. J. Putnam. "Microscopic Specimens Illustrating: 1. The Nerve Alterations in a Case of Beri-beri; 2. The Nerve Alterations in a Case of Scleroderma; 3. The Alterations in Nerves Excised for Neuralgia," by Dr. J. J. Putnam. "Some Contributions to the Study of the Muscular Sense," by Dr. G. J. Preston. "Fissural Studies," by Dr. Burt G. Wilder. "Preliminary Report of the Committee on Neuronymy," "Three Cases of a Hitherto Unclassified Affection Resembling, in its Grosser Aspects, Obesity but Associated with Special Nervous Symptoms. A Tropho-neurosis Possibly Related to Diseases of the Thyroid Gland, not Myxedema," by Dr. F. X. Dercum. "Two Cases of Akromegaly, with Remarks on the Pathology of the Disease," by Dr. F. X. Dercum. "Discription of an Additional Chinese Brain," by Dr. F. X. Dercum. "The Toxic Origin of Insanity," by Dr. Theodore H. Kellogg. "Folie à deux, with Remarks on Similar Types of Insanity," by Dr. Charles K. Mills. "Three Cases of Folie Communiquée," by Dr. James Hendrie Lloyd.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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ORIGINAL ARTICLES.

CONDITIONS INDICATING CHANGE OF AIR AND BATHS IN THE SUMMER DIARRHEA OF CHILDREN.[1]

BY SIMON BARUCH, M.D.,

VISITING PHYSICIAN TO THE NEW YORK JUVENILE ASYLUM, MANHATTAN GENERAL HOSPITAL, AND CONSULTING PHYSICIAN TO THE MONTEFIORE HOME FOR CHRONIC INVALIDS, NEW YORK.

THE removal of the causes of disease being the chief aim of modern therapy, the unsanitary conditions that actively contribute to the development and maintenance of the summer diarrhea of children constitute an important element in the prophylaxis.

Change of Air—does not, as is sometimes erroneously supposed, improve the condition of the sick child by reason of any special difference in the proportions of oxygen or other chemic constituent. The chief factors that warrant us in advising change of air are (1) high temperature and marked humidity, or both; (2) the presence of impurities.

The pronounced influence of high atmospheric temperature and extreme humidity in the causation and maintenance of summer diarrhea in children has long been observed. Whenever, therefore, the usual treatment seems unavailing, especially when extreme prostration, with or without febrile exacerbations, becomes an element in a case of summer diarrhea, the question of change of air becomes important. Of what avail are stimulants, tonics and food, when the little sufferer is forced to toss under the constant, relentless systemic oppression produced by a stifling atmosphere, especially if aggravated by an excess of moisture, from which there is no escape, even by the most careful ventilation. Rich and poor are alike crushed under this terrible combination; for even in the open parks of the city it operates in full force. Removal by a rapid and comfortable journey to high altitudes or seaside, sufficiently remote to furnish a complete change from one or both of these prejudicial atmospheric conditions, becomes imperative in many cases. The change in the entire aspect of a case of summer diarrhea under such favoring conditions has been so often observed that I need not emphasize its importance.

The existence of atmospheric impurities demands removal of the little patient. This is so trite an observation that it would be absurd to dwell upon it, were it not so frequently disregarded. To the credit of the medical profession be it said that its disregard is chiefly chargeable to circumstances over which it has no control.

Among the well-to-do classes atmospheric impurities are rarely operative in summer. While imperfect ventilation frequently breeds such impurities in winter, even in the best-appointed dwellings, the advent of summer forces the occupants to open doors and windows for their comfort and convenience. Unless, therefore, the residence lies in a narrow or overcrowded street, or in one of those elegant but cramped apartments which are really but gilded tenements, change of air will rarely be required in this class of patients.

How different is it among the poor, who are always with us, and to aid and relieve whom is the highest and noblest privilege of civilized man. The noisome tenements in which the children of the poor, and many even of the better class of working-people, are huddled together, are excellent places for the culture and propagation of the elements that contribute to the development and maintenance of summer diarrhea in children. The chief aim in the treatment of the latter is now recognized to be clean food taken into a clean stomach, and its detritus removed as far as possible through a clean intestinal tract. The difficulty of meeting these indications in apartments abounding in dust and emanations from numerous human beings crowded together need but be referred to here. Hence, removal from the influence of this prominent etiologic factor becomes imperative, not for the purpose of securing, as was formerly held, air containing more oxygen, but with a view of having the patient surrounded by air containing less filth and its accompanying bacteria.

How to furnish these poor people with the means of obtaining so important a curative agent as change of air has long been a problem. Fortunately, charitable people have gone earnestly to work to solve it. It is a singular coincidence that just at the moment when these lines were penned, the mail brought me the program of an entertainment to be given for the benefit of one of these charitable enterprises, the St. John's Guild, which has built seaside hospitals, and furnishes thousands of sick children an opportunity to escape for a day or longer from

[1] Read before the Pediatric Section of the New York Academy of Medicine, May 12, 1892.

the depressing influence of impure air, besides giving them good food and medicines. To the poor, whose children require it, this change from a filth-laden atmosphere to the pure breezes of a harbor comes as a refreshing and vivifying blessing that cannot be over-estimated. Such recognition of the value of change of air in the treatment of the summer diarrhea of the children of the poor offers a more convincing argument than aught I can bring forward to establish it.

It behooves us, therefore, to further a charity the object of which is so laudable and practically beneficent.

There is one point in connection with change of air as a remedy that requires special emphasis. While, for reasons already mentioned, a change is imperative in almost all cases of summer diarrhea of the children residing in crowded tenement-houses, it is not so important in those cases whose environment is more favorable for home-treatment. Indeed, the change from a comfortable home to a country hotel, which is apt to be overcrowded, is not to be advised without careful reflection. It is not an infrequent occurrence to order a sick child away when the symptoms become alarming, without time for preparation or due inquiry. The consequences are discomfort from immaturity of plans, great expense, disturbance of the family, and consequent anxiety and unhappiness for the parents and friends.

Do the benefits to accrue to the little patients warrant these? The advantages and disadvantages of removal should be well weighed ere a change of air is decided upon; but, above all things, we must be satisfied that we have exhausted all other treatment. As I have said already, careful attention to sterilization of the food and to intestinal irrigation are of far greater importance than change of air. *We should be sure that these have been fairly tried before advising the change.* This statement is made as the result of practical observations at a noted summer resort, where I see many such cases every summer. To illustrate: In the summer of 1890 I was asked by Dr. Alfred Meyer, who was ill, to see for him a wizen-faced infant whose mother, being poor, had, at great sacrifice, brought it to a third-rate hotel at Long Branch for change of air as a last resort. The child had not improved, simply because its food was not proper and its intestinal canal had not been flushed. One dose of castor oil, followed by two intestinal irrigations and the use of sterilized milk, obtained by converting her medicine bottles and saucepan into a sterilizer, brought about a rapid recovery, enhanced by the constant exposure of the infant to the pure, ozone-laden air. Last summer I was called to the Long Branch home of the Babies' Shelter of New York to see two children whose diarrhea had not improved under the best dietetic and medicinal care in the city and after several weeks' residence in the country. A few intestinal irrigations sufficed to make a complete change in these cases, and contributed more to their recovery than change of air had done. The lesson from such cases is evident. While all cases of summer diarrhea of infants living in crowded houses demand change of air, other treatment is at least equally important. Among the better-situated, change of air need not be insisted upon until all approved methods of treatment have been fairly tried.

Conditions indicating Baths.—In the brief time at my disposal, the discussion of this subject must be cursory. Baths for cleanliness are always demanded in summer diarrhea, not only because the frequent soiling renders them more necessary, but because the maintenance of the functions of the skin seems to relieve internal congestion and fluxion.

In acute cholera infantum, baths for therapeutic purposes are of paramount importance, affording more positive relief and contributing more to the cure than all other measures. This form of summer diarrhea has by some not inaptly been regarded as a type of heat-stroke. Certain it is that if the temperature is taken in the rectum, it will almost always be found high; not infrequently there is hyperpyrexia, though the skin of the extremities and face be cool and clammy. Whenever the temperature exceeds 102° F., a cooling procedure is indicated. It is important that the proper method of bathing should be adopted, and that its *rationale* be well understood.

In these cases there is usually profound involvement of the nervous system, frequently manifested by a dull, apathetic countenance, sunken eyes, deadly pallor, cool extremities, not rarely terminating in outspoken eclamptic seizures. Medicines and stimulants are useless, because the stomach and rectum do not tolerate them. Such a child should be put at full length into a tub of water at 90°, after its face and head have been bathed with ice-water; gentle friction should be constantly made, while someone is removing with a pitcher the tepid water and replacing it by ice-water poured over the side of the tub farthest from the patient's body. The temperature of the bath is thus gradually lowered to 80°. If there be marked cerebral disturbance, water at 60° may be poured upon the head and shoulders. The child's body must be entirely submerged, the head only not being immersed. Its cries and protestations of chilliness must be met with gentleness, yet with firmness. For fifteen minutes the agitation of the water and friction of the body should be kept up, unless cyanosis of the face or decided shivering ensues. The latter will

be prevented by active friction, which stimulates the peripheral circulation.

After the bath the child is placed upon a linen sheet, previously laid smoothly upon a blanket. If the temperature before the bath — and it should always be taken at this time—has been 103.5° or higher, the child should be wrapped in the sheet so that every part of the body and extremities is well covered by it; the blanket is now snugly wrapped over and tucked under the body, which is thus allowed to dry. If, on the contrary, the temperature has been below 103.5°, the child should be gently mopped dry and its clothing be replaced at once. Such a bath is almost invariably followed by calm and refreshing slumber, from which the child awakens bright and playful.

Let it be understood that the object of this bath is not to reduce temperature, although this is an important incidental result. We have here a vasomotor paralysis, as evidenced by the pallor of the entire body, even when a high temperature is registered in the rectum. By immersing the entire body in tepid water we produce a mild shock, which is gradually increased by the removal of warm and the addition of cold water, and is enhanced by frictions of the body and constant agitation of the cooling water against the skin. These gentle shocks are succeeded by equally gentle reactions, so that the cutaneous vessels dilate, as evidenced by redness of the skin. If, in addition, the face and head are bathed with a little colder water, at 60°, the shock and reaction are increased, the respiration deepens, the heart beats with more vigor and less rapidity, the eye brightens, the color returns to the lips, the child becomes more animated.

The effect of a skilfully-administered bath in the condition of nerve-prostration incident, in many children, to acute summer diarrhea must be observed to be fully appreciated. In my experience it has been an inestimable boon, affording hope and comfort under the most trying and desperate conditions. My mind still retains vivid recollections of the days when I was a student and of the early years of my practice, when the condition of profound adynamia, usually associated with hyperpyrexia, was called spurious hydrocephalus, and the cases were allowed to die under blisters to the nucha and small doses of calomel. These cases do not now come under my observation; they are forestalled by the bath and by more rational treatment, foremost in which is judicious gastro-intestinal irrigation.

When there is objection or prejudice to tub-bathing, or when there is extreme jactitation, or when there are convulsions, the little patient may be placed in the wet pack, or the bath may be followed by the latter to maintain the calming effect. The wet pack is prepared by wringing out of water at a temperature of from 50° to 60° a linen sheet folded into a third of its usual size and smoothly laid (folded to suit the size of the child) upon a blanket. The child is snugly wrapped in the damp sheet (which may be made more wet if the temperature be high), so that the arms receive a fold to separate them from the body, and the legs a fold to separate them from each other. The blanket is now snugly tucked around the child, so as to completely envelop it, like a mummy, to prevent evaporation. This pack may be repeated two or three times, at intervals of ten minutes. The previously tossing child will usually drop into tranquil slumber, from which it should not be aroused. After the wet pack the body should always be rubbed with a linen cloth not quite wrung out of water at 70° F., and dried.

In the subacute form of summer diarrhea the chief condition indicating baths is the general depression of the system arising from the great drain upon the blood and nervous system. The pulse is usually rapid; the temperature ranges from 99° to 101°, with occasional exacerbations; the skin is inelastic; the face is sallow; in short, the symptoms are those of chronic adynamia, due to imperfect nutrition. To stimulate the appetite, improve the general nervous condition—in a word, to refresh the entire organism—should be our therapeutic endeavor. The most approved tonics and stimulants often fail, as Dr. Chapin has so graphically and poetically told us. In these cases general ablutions, morning and evening, are preferable to baths. The child is placed upon a soft woolen blanket; the abdomen, chest, and back are rapidly bathed, not sponged, as follows: From the hollow of the naked hand water at a temperature of 75° F. is poured upon the skin, which is then gently rubbed with the same hand. This is repeated until the entire body has been thus treated as far as the knees and elbows. The body is now rapidly dried by placing it upon a linen sheet, using friction with a rough towel if the temperature is below 99.5°, and only gentle mopping if it is above 100° F. If the temperature reaches 102°, a general bath is indicated, beginning with water at a temperature of 95°, which is gradually reduced by agitation and friction to 85°. Gentle drying follows.

The refreshing effect of these procedures has been so frequently observed that I do not hesitate to commend them to your adoption. There are many modifications of baths indicated by the various symptoms in summer diarrhea of infants. The time-limit precludes their description. Suffice it to say that no case should be regarded as intractable or too desperate until some form of hydriatric procedure (the adaptation of which to each case often requires more judgment than that of medicinal agents) has been tried.

SIMPLE FRACTURE OF THE SHAFT OF THE FEMUR, AND ITS TREATMENT WITH THE LONG SPLINT.[1]

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A VERY special interest attaches to fractures of the femur, for the reasons—First, of the desirability that firm union, with the least possible degree of deformity, either angular, rotatory, or from shortening, shall result; and, secondly, that this result shall be obtained with the minimum degree of discomfort to the patient during the treatment.

The use of the lower extremities is primarily to sustain the weight of the body and for locomotion. In addition to this, the femur and the bones of the leg are often called upon to sustain great additional weights, proportioned to the strength of the individual and the requirements of his occupation, often amounting to hundreds of pounds, so that, when fractures take place, the end and aim of the treatment should be to restore the limb unimpaired in shape, strength, and action.

Experience and observation have shown that a little over 50 per cent. of fractures of the femur occur in the middle third, about 30 per cent. in the lower third, and a little less than 20 per cent. in the upper third. I desire to confine myself in this article to the consideration only of fractures occurring in the middle third, in the upper half of the lower third, and in the lower half of the upper third; or, in other words, those occurring at a distance from the hip-joint and knee-joint. The majority of fractures, occurring anywhere in the length of the bone, are due to indirect violence. Confining ourselves to the parts of the shaft that I have selected, we find that direct violence is the most important factor.

When there is entire division of the shaft of a long bone, the two fragments are, as a rule, displaced as regards their relation with each other in one or more ways. First: Transversely, varying from a small part of the diameter of the bone to its entire width or even more. Second: Longitudinally, as when the fragments override one another, causing shortening. Third: Angularly, as when the ends of the fragments remain in contact, but by the contraction of the muscles the limb is shortened, causing the long axis of the limb to form an angle. With any of these may be combined rotation of one of the fragments on its long axis.

I am not aware that such a thing as a purely lateral displacement ever occurs; but, in the event of its occurrence, we should not expect shortening, while with longitudinal or angular displacement there is always shortening.

Extension, counter-extension, and coaptation will remedy the transverse, longitudinal, and angular defects, whilst the rotatory displacement is corrected by rotating the lower fragment until its position corresponds with the upper one. By these means, combined with retentive dressings, immobility of the fragments is permanently secured until bony union is complete. This varies as to time according to the age and condition of the subject. Lameness and soreness at the seat of the break and in the knee persist for a number of weeks, and sometimes for months after all artificial support is discarded.

The very general rule is that, after most careful adjustment of the broken bone, and with most skilful management afterward, there will be some degree of shortening, varying from one-fourth of an inch to an inch, the mean being about one-half of an inch.

Up to a certain limit, measurements cannot be relied on, as there are reasons that make them inexact. To say that a leg is one-eighth, or even one-quarter, of an inch shortened by a fracture places the correctness of the measurement under suspicion. Besides, the points between which the measurements are made vary as to position and conformation. The malleolus on one side may be longer or shorter than its fellow, or the anterior superior spinous process of the ilium may be situated lower or higher than its opposite.

Permanent lameness may result from the smallest degree of shortening, owing to the inability of the individual to drop the pelvis toward the shortened side so as to compensate for the difference in length of the limbs. On the other hand, others adapt themselves in a short time to the changed conditions, so that no lameness exists even when the actual shortening amounts to an inch. I do not believe that a limp can be prevented when one limb is more than one inch shorter than the other, whether the shortening be congenital, or due to a break.

After fracture of the femur, the chances for good results, so far as length is concerned, are governed in some degree by the limb that is fractured. A larger percentage of left femurs are known to be longer than the right, in cases in which a difference exists. The most reliable statistics show that in only 10 per cent. of all cases are the femurs of equal length. In the 90 per cent. in which inequalities exist, the right femur is longer in 35.7 per cent. and the left in 54.3 per cent., so that in a larger number of fractures of the left femur the shortening following a fracture is not apparent on measurement after repair has taken place. This accounts for the clinical fact, long observed, that fewer left femurs were

[1] Read before the Medical Society of the District of Columbia, at its meeting on March 23, 1892.

shorter than the right after recovery from fracture, the explanation of which is found in the more recently acquired knowledge of the natural difference in length and the relation it bears to the two sides.

It may be that great shortening is found after a fracture, a small part only of which is due to the treatment. The natural difference in the length of the thigh-bones may be as much as an inch. Let us suppose that in such a case a fracture occurs in the shorter femur and unites with half an inch of shortening, due to the fracture. This, added to the inch of natural deformity, would give a total shortening of one and one-half inches, enough to cause a decided limp, yet the main part of it would be due to the natural defect.

Conversely, a femur an inch longer than its fellow might be fractured and shortening of an inch or more result, with the effect of restoring uniformity of length without lameness, provided that the proper relation of the axes of the two fragments were maintained; that is to say, if there were no angular or rotatory deformity. When there has been an oblique fracture of the shaft of the femur, and when, after repair, no shortening can be made out, it may be accepted that the bone that was broken was longer than its mate.

To get union after fracture of the femur, without leaving a trace of the injury in shape or usefulness, has engaged the attention and taxed the ingenuity of eminent surgeons, and many complicated appliances have been used, none of which can be said to be entirely satisfactory. Good results have been and can be obtained by any form of apparatus when the management is in the hands of expert surgeons. It must be remembered, however, that a large proportion of the fractures are not treated by surgeons of experience, but by men who see and treat but a limited number in the whole of a long professional career. Only frequent opportunities and the intelligent use of such apparatus can confer expertness.

Many facts in regard to the results after fractures of the femur have accumulated during the past twenty years in my experience, observed almost daily in examining men who suffered such fractures during the late Civil War, and since that time in the regular army and in civil life. These facts have convinced me of the necessity of more reliable and simpler methods than those generally adopted, or of better instruction. My notes show but a small percentage of what could be regarded as good results. About 70 per cent. of the number were treated with the pulley and weight, with elevation of the foot of the bed, and varied retentive appliances: sand-bags, short side and coaptation splints, etc.; the remaining 30 per cent. were treated with the long straight splint, with the perineal band and foot extension. No very gross deformity was met with in any of the cases treated by the latter method, while a number of actual cripples presented themselves, who had been treated by the former plan.

The physician who sees and treats but an occasional fracture should use an uncomplicated and, above all, a safe apparatus. Of these there is none so available and reliable as the long, straight outside splint, reaching from the axilla to a point six or eight inches beyond the bottom of the foot, with its opposite reaching from the perineum to a length beyond the foot corresponding to the long one. This is nothing more than the old Desault splint as modified and lengthened by Physick. The principle of the application of extension and counter-extension is the same as that used by Liston, but the splint applied to the inside of the thigh adds greatly to the certainty with which the fragments can be kept in place.

Only 29.12 per cent. of the population of this country live in cities and towns of four thousand inhabitants and upward, whilst 70.88 per cent. live in the rural districts. The larger proportion of this latter class are engaged in pursuits that expose them to great risks—such as farming, mining, lumbering, railroad construction, quarrying, etc.—and it is but reasonable to expect a large number of fractures among them.

The country practitioner, when called upon to treat a case of fracture, has many difficulties to contend with, and it is not reasonable to expect that he can get so many good results, with the use of similar complicated appliances, as his city brother. The latter has his patient near at hand, and very often in the care of an intelligent trained nurse, whilst the country surgeon has to depend for nursing on the family or friends and has to travel a long distance to visit his case. Frequently he is unable to see the patient often enough to correct faults that may arise at any time when a complicated apparatus is used. The simplicity of the long splints, and the certainty with which they can be kept in place, commend them particularly to the country surgeon; even in cities better results, with less trouble both to the surgeon and the family, may be obtained with them than with any other form of apparatus. Besides, in my experience, the comfort of the patient is very greatly promoted by this splint; for, when properly applied, the movements of the patient up and down in bed do not disturb the fragments. Absolute restraint for any length of time is extremely irksome, and when this is combined with the distressing tension to which a weight hung to his leg subjects the patient, together with the weariness and discomfort resulting from the constant strain on the muscles of the leg and thigh, the result must be well-nigh intolerable.

It requires great skill and much experience to

decide the exact weight to be used. Too great a strain may separate the fragments and prevent union; too small an amount will allow the muscles to contract, causing shortening. All these considerations are eliminated, or, at least, much modified by the use of the long splint. The extension and counter-extension are so applied, at the time of adjusting the fracture, as to bring the muscles to their natural length, as they should be when the limb is extended from hip to ankle, and in that position they are held. The dressing cannot be painful, so far as the muscles are concerned, for they are neither in a state of contraction nor extended beyond the natural, and, above all, they are relieved of the constant drag that becomes so burdensome to the patient when a weight is used.

I do not deny that the pulley and weight may be, on rare occasions, necessary. When the patient is large, strong, and muscular, and when it is difficult to secure the proper length of the limb by immediate extension, the plan of applying a heavy weight, proportionate to the resistance, for a sufficient time to tire the muscles, may be necessary, after which the long splint, with the perineal band and fixation of the foot to the lower extremity may be adopted. In adults, at about the fifth week, the splints may with safety be replaced by a well-applied plaster-of-Paris dressing, reaching from below the knee to the groin. This change of splints is a great relief to the patient, giving more freedom at once, which, however, should be indulged in with care for the following two weeks, after which time he may get out of bed and move about on crutches for a few days, when the cast may be removed. The use of crutches should be continued for a few days, say a week, longer, at the end of which time the femur should be strong enough to support the weight of the body, but no heavy burdens should be carried or heavy lifting be done for a number of weeks more.

It has been urged that it is difficult to apply the long straight splints without the risk of displacing the fragments after adjustment—an objection that is not tenable, provided that the arrangements for their application are properly made and carried into effect.

The first requisite for the treatment of fracture of the femur, no difference what appliances may be used, is a firm, smooth mattress, laid on an unyielding foundation, on which the patient should be placed before the fracture is set. Now the splints should be prepared of suitable length, width, and strength; the outer long enough to reach from just below the axilla to six or eight inches beyond the sole of the foot, as wide as the thickest part of the normal thigh, notched at the lower extremity, and with two holes bored and bevelled at the upper extremity. The inner splint should be of the same width and strength as the outer, and should extend from the perineum to the same distance beyond the foot as its fellow, without holes above or notches below. Both splints must be carefully padded with long, smooth strips of fine absorbent cotton, or a good quality of cotton batting, wide enough to extend a trifle beyond the edges of the splints and shaped to fit the natural inequalities in surface of the limb, the prominences being especially protected. The aim should be to secure a uniform pressure on every part of the length of the limb. The padding can be held in place by strips of muslin long enough to encircle the splint and padding, placed from four to six inches apart, and tied on the outside of the splint.

The perineal band should now be fitted and left loosely in place. A large, soft napkin or handkerchief, carefully folded and—if at hand—covered with oiled silk, answers the purpose well. Next, a strip of strong adhesive plaster, two inches wide, is applied, extending from above the knee, down the leg on one side, around the bottom of the foot, leaving a short loop at the turn, and up the other side of the leg to a point as high as that of beginning. The malleoli should be protected by layers of cotton between them and the plaster. A few short transverse strips of plaster may be applied to give the long strip firmness enough to bear the traction to which it will be subjected.

Then a number of canvas straps with buckles, or, what will answer the purpose just as well, strips of strong muslin a couple of inches wide and long enough to encircle the limb and splints, are laid under the leg and thigh from the ankle to the perineum at intervals of four inches. To complete the arrangement a broad band should be placed under the body, wide enough to extend from the axilla to the hips and long enough to go around the body and lap three or four inches.

Now, with properly applied extension and counter-extension, the thigh is brought to its normal length, and by manipulation the fragments are made to assume their proper relation to each other, an anesthetic being used, if necessary.

The outer splint should now be placed alongside the limb and the free extremities of the perineal band carried through the holes at the top of the splint and fastened. Next, by means of a cord or a strong strip of muslin passed through the loop of adhesive plaster, the foot is securely fastened to the bottom of the splint, and it can be so securely fastened and held between the extending and counter-extending forces as to prevent shortening. The inner splint is now put in place and the straps buckled, or the strips, if they be used, securely tied. If this arrangement be effectively carried out, there need not be the least movement of the limb. The binder about

the body may now be fastened by two rows of safety-pins, one at the exposed and one at the concealed extremity.

There is a safety in this method that no other plan of treatment possesses, and it has the advantage of being easily carried out. If I may judge from the testimony of the patients treated by me by various methods, those treated with the long splint suffered less than those treated by any other appliance. It is found, by observation and a perusal of the statistics of all the larger hospitals in this country and Europe, that about 12 per cent. (the extremes ranging from 7 per cent. to 18 per cent., depending on localities) of all fractures are in the femur. Considering the importance of the bone, it is a matter of no small moment that the management of its fractures should be conducted with effectiveness and simplicity. At the same time the comfort of the patient should not be disregarded.

Of 668 cases of fracture, taken from the records of the Freedmen's Hospital in this city, 84 were of the shaft of the femur, all of which were treated with the long straight splints, with perineal band and foot extension. The results have been all that could be desired. The average shortening, in cases in which shortening was found, did not exceed one-half inch, and there were no instances of angular or rotatory deformity. The average time the splints were left on, during the earlier years of the existence of the hospital, was about six weeks. During the past six years they have been replaced by the plaster-of-Paris dressing at the end of four or five weeks, and the treatment by this method is complete in from six to eight weeks, after which time the patient is allowed to move about freely on crutches for a few days longer.

My own personal experience in the treatment of this fracture covers all the methods recommended, but I have finally settled on the long straight splints as furnishing the most available as well as the most certain plan for securing satisfactory results. With care, the risk of the extending and counter-extending forces becoming relaxed, so as to allow the muscles to contract and cause shortening, is small, and one that has given me but little concern. I have notes of thirty-seven cases treated by me by this method within the last six years. In not one was the shortening enough to cause a limp, and the contour of the limb was normal in every instance.

In conclusion, let me sum up by saying that this plan of retentive dressings for fracture of the femur is easily applied; the splints are easily made, and the patient is more easily and more safely handled than by any other appliance. There is no risk of displacing the fragments if the patient moves up and down, and he may even move sideways to a limited extent — a small liberty that adds greatly to the comfort of the sufferer.

In the case of young children they can be lifted from the bed without risk—an advantage not associated with any other retentive dressing, except the plaster-of-Paris.

It is my opinion, however, that this latter dressing should never be applied during the early days of a fracture, not only of the femur, but of any of the long bones.

A FEW SUGGESTIONS ON THE DIAGNOSIS AND TREATMENT OF LUPUS.[1]

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IT is not the object of this paper to discuss *in extenso* the various aspects of lupus, nor to detail the several modes of treatment in vogue, but to present in a concise way the main points as to diagnosis and treatment that have presented themselves to the writer from time to time.

It is accepted as a fact that lupus is a local tuberculosis, in main identical in histologic structure with tuberculosis of the internal or more vital organs, and like it due to the bacillus tuberculosis.

The simplest form is called lupus erythematosus. Histologically it is a small-celled new-growth of the skin, best marked about the bloodvessels, clinically appearing in the form of one or more circumscribed, variously sized, reddish patches, covered with grayish-yellow, adherent scales.

Its favorite seat is on the face; it is a disease of middle life, is never seen in childhood or in old age, and is far more common in women than in men. Jonathan Hutchinson states that it is frequently found in persons having a languid circulation, as evidenced by cold hands and feet, and with a purple, mottled skin. Thus, in its incipiency, it seems allied to erythema, which at first it closely resembles. Lupus erythematosus, however, is circumscribed, with well-defined margins, and although at first it may show a tendency to evanescence, yet it always recurs in the positions previously invaded; while erythema is not sharply defined, it extends over a larger area, is markedly evanescent, and tends to invade new surfaces rather than to return to positions previously occupied. As lupus erythematosus develops, its appearance is quite unlike that of erythema, and little difficulty will be experienced in a differential diagnosis.

From rosacea, lupus erythematosus may be distinguished by the engorged condition of the blood-

[1] Abstract of a paper read before the Surgical Section of the American Medical Association, held at Detroit, from June 7 to 10, 1892.

vessels, which in the former constitutes one of the most prominent features. Then, acute inflammation of the sebaceous follicles accompanies rosacea; its distribution is on the tip of the nose, chin, and not infrequently over the entire face, while lupus erythematosus usually appears over the malar bones and extends thence across the bridge of the nose—butterfly-shaped.

Lupus erythematosus may, however, occur on other parts of the face, more rarely on the trunk and extremities, when a diagnosis is oftentimes extremely difficult. In these positions it resembles tinea circinata, but in the latter there is usually a history of contagion; if this be wanting, the only trustworthy means of differentiation at our command is the microscope. After macerating the scales of tinea in liquor potassæ for a few minutes, a sixth-of-an-inch objective will enable one to detect the tricophyton, which is absent in scrapings from a lupus surface.

Eczema in middle or advanced life may resemble lupus erythematosus. This especially applies to the form of eczema found in gouty or rheumatic subjects,[1] which occurs most frequently on the back of the hands, and when one hand alone is involved the resemblance may be quite misleading. In eczema there is invariably a history of moisture in the early stage of the disease—the so-called catarrhal inflammation—and it is usual even late in its course to find groups of vesicles in the neighborhood, notably on the fingers and toes; while the eruption of lupus erythematosus is essentially dry.

Then again, eczema is ill-defined at the margins and gradually merges into the healthy skin, which contrasts with the exaggerated peripheral disturbance that gives to lupus a sharp line of demarcation.

The sensation of itching is of little diagnostic value.

Although the surface of a patch of lupus may resemble that of other affections, yet the bed underlying the scaly covering is peculiar to this disease. On picking up the scales, which are firmly adherent, it will be seen that there are processes extending downward into the sebaceous follicles, which after removal leave the patulous openings of the follicles plainly visible. At other places, blood will be seen oozing from the ragged surface. In eczema, upon removing the scales, the surface will be found moist, as if bathed in copious perspiration.

Psoriasis in a mild form, especially when it occurs in gouty or rheumatic persons, as Liveing has pointed out,[2] at times closely resembles lupus erythematosus; this is notably so when the disease appears on the scalp; but, first, the history of invasion is widely dissimilar in the two affections, psoriasis making its appearance about the age of puberty, while lupus erythematosus appears at a period ranging between twenty-five and forty-five years of age.

Again, the scales of psoriasis are silvery white, imbricated, and less firmly adherent; the base of the patch is smooth or undulating, at times showing the summits of the enlarged papillæ; while the scales of lupus and its base present the features already described.

The extension of the lupoid process downward into the sebaceous sac and hair-follicle interferes with the nutrition of the hair, so that when the disease occurs on the scalp or bearded part of the face in men, the roots of the hairs are destroyed, leaving bald plaques; while in psoriasis the root of the hair is but little, if at all, affected.

Syphilis in its protean manifestations may resemble lupus erythematosus. In the absence of a syphilitic history, which requires the greatest care lest it prove misleading, the lesions themselves may be differentiated; and in this it is well to bear in mind that the lesions of syphilis are more general in their distribution; they are, as a rule, more evanescent and of a darker color. Finally, in case of doubt, a fortnight's treatment with anti-syphilitic remedies may be resorted to. Lupus erythematosus leaves scars that may be scarcely perceptible; in severe cases they resemble parchment.

Lupus vulgaris is a more severe form of the disease. It also is a cellular new-growth, characterized by variously sized and shaped, reddish or brownish patches, which consist of papules, tubercles, or flat infiltrations, usually terminating in ulceration and the formation of disfiguring cicatrices.

This form is more pronounced and consequently less liable to be confounded with other affections. There is one disease, however, in which a positive diagnosis is often extremely difficult, viz., syphilis. This similarity only applies to the late manifestations of syphilis, when the variously-appearing lesions are primarily made up of granulation-tissue. Histologically, lupus likewise comes under the head of granulation-tissue, so that the external aspects of the two affections in the different stages of development and degeneration are closely alike. Generally the histories of the individual lesions—not of the disease, for in syphilis this is frequently misleading—will enable one to determine to which of these affections the case belongs. In lupus vulgaris the lesion will be found first making its appearance early in life, at about the age of puberty, and the eruption is extremely chronic, often remaining for years with but slight variation. The late manifestations of acquired syphilis occur later in life, are more widely distributed, and, although slow in

[1] "Diseases of the Skin in the Subjects of Gout," Journ. Cutaneous and Venereal Diseases, September, 1886.

[2] A Handbook on the Diagnosis of Skin Diseases, London, 1878.

course, their duration is a matter of months rather than of years, as is the case with lupus.

There are also distinctive features in the lesions that the experienced eye may readily detect, but that can be but imperfectly described. The following may be mentioned as the most noteworthy: The base of the lupus patch shows an exuberant growth of granulations, its margins are undermined, and islets of lupus-tubercles are seen in the adjacent skin. In syphilis, the margins are clearly cut, as if punched out, with a smooth, ashen-gray base. Lupus attacks the soft parts, which it destroys; in severe cases cartilage offers no certain barrier to its ravages; but it never attacks bone; not so with syphilis, which late in its course has even a predilection for the osseous system. Again, when syphilis occurs on the face, it is most commonly seen on the upper part of the forehead, the fissures between the alæ of the nose and the upper lip and the angles of the mouth, in which latter positions it is pathognomonic; whereas lupus vulgaris selects in preference the nose, cheeks, and ears. Too much stress must not be laid on the color, for it may or may not be distinctive.

Even greater difficulty will be experienced when lupus invades the trunk or extremities. Here the main point of diagnostic value is the limited area of the eruption, and if accompanied by lupus on other parts, as on the face, its extreme persistency will enable one to exclude the multiple and more short-lived eruptions of syphilis; nor will the microscope aid materially in the diagnosis, as the tubercle-bacillus is difficult to detect and is not found in all specimens examined. As in lupus erythematosus, when doubt still exists a fortnight's treatment with some form of iodine will usually settle the diagnosis so far as relates to syphilis.

It is very seldom that epithelioma or rodent ulcer is mistaken for lupus, yet a limited patch of the latter may bear some similarity to the former; and as epithelioma leads to a fatal termination, and is only successfully treated before the lymphatic glands are implicated, its early recognition is all-important.

First, as to age; lupus appears before thirty-five, while epithelioma comes later in life. The nodules of lupus are multiple, while epithelioma presents but a single lesion. At times, the fungoid growth of the lupus-tubercle contrasts strongly with the ulcer-like lesion of epithelioma. In lupus, the lesion is soft, while in carcinoma the base and margins are hard, and the surface is glazed with a watery secretion.

Occasionally, epithelioma develops on a surface already occupied by lupus. The one case that has come under my observation at St. Alexis Hospital rapidly passed on to a fatal termination.

Lupus verrucosus is a more rare form, and in my experience has been encountered in very strumous subjects early in life. The warty outgrowth is quite characteristic, and once seen cannot well be mistaken for anything else.

The treatment of lupus must also be considered *seriatim*. First, in regard to lupus erythematosus: As in granulomata, scrofulomata, etc., of different writers, the general condition of the patient should be seen to, and at its onset the disease may yield to this alone.

The diet should contain a large quantity of the hydrocarbons, and the form that is most generally acceptable is butter. Following in the same line, cod-liver oil stands in high esteem. Then in the rôle of medicaments come iodine and creasote. Some years ago, Dr. Liveing, of London, carried out what he called the iodine-treatment for lupus. Iodine in various combinations was given internally to toleration, and an ointment of mercuric iodide was applied to the lupus surface. There could be no doubt that cases of lupus at the Middlesex Hospital were greatly benefited, but according to my subsequent experience the disease is not eradicated even after a prolonged course, and it readily resumes its wonted severity on discontinuing the treatment.

More recently Bulkley has extolled the internal use of phosphorus, but my own limited experience with it has not encouraged its further use. At the Hurlbut and Huntington Dispensaries of Western Reserve University, creasote is extensively used by my confrères for tuberculosis,[1] and its employment in the treatment of lupus during the past two years leads me to believe that the remedy is of decided benefit in this disease. The dose varies somewhat according to individual peculiarities, but it is well to begin with from one to two minims in capsule every two hours. This may be increased to three minims every two or three hours.

In severe or neglected cases, however, it will be necessary in addition to attack the disease *in situ*. The following is a simple and efficient procedure: The surface is prepared by washing it vigorously with hot water and the German green soap; the latter is then thoroughly rubbed into the skin and allowed to remain for an hour. The surface is again cleansed, when the scales and follicular processes into the sebaceous glands will be cleared away, leaving a raw surface. Then apply—

℞.—Sulph. precip. . . . . ℥iij.
Glycerini } āā . . . . ℥j.—M.
Alcoholis }

S.—Apply three times a day.

Two or three times a week for a fortnight the green soap should be repeated.

[1] "How to Give Creasote," by Howard S. Straight, M.D., Cleveland Med. Gazette, December, 1891.

In more severe cases I have added to the preceding formula ammonium sulpho-ichthyolate in the strength of 5 per cent., and have found it a valuable adjuvant. Mercury, in the form of the diachylon plaster, the white precipitate ointment, or the oleate (20 per cent.), likewise has its advocates, and is without doubt a valuable application.

In many cases, however, more radical measures are required, and I have found linear scarification, as practised so extensively at the Hôpital St.-Louis by Vidal, the most efficient means at our command. The cuts are made entirely through the derma and closely together, then crosswise. After the bleeding has ceased, emplastrum vigo cum mercurio is applied. This dressing should be removed daily, and the scarification repeated twice a week.

In the treatment of lupus vulgaris, what has been said in regard to the hygienic management and internal medication of lupus erythematosus applies with equal force; but more especially in this disease are external procedures required. Bearing in mind that we have to deal with a local tuberculosis that extends indefinitely, constantly invading new tissue, each additional tubercle acting as a new focus of infection, the object of treatment is obviously to cut short this process of extension and to remove the noxious material already formed. This is done as follows: The patient is chloroformed, and with a Volkmann's spoon the tubercles are cleanly scraped out; then the parts are washed with a mercuric chloride solution (1 : 1000), and pyrogallic acid is packed into the excavations thus formed. This dressing is repeated daily for several days; then some simple dressing, such as the white precipitate ointment or the emplastrum vigo cum mercurio, is applied until resolution takes place. Occasionally the pain, subsequent inflammation, and constitutional disturbance are too severe, when some of the milder escharotics should be employed. Of these, creasote and carbolic acid are the best, causing but slight pain and no constitutional ill-effects. Seldom will one operation suffice, for in a few weeks or months brownish spots will be seen; these soon develop into tubercles, when the procedure must be repeated until the cure is complete.

THE DIFFERENT FORMS OF CARDIAC PAIN.[1]

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Cardiac pain is a symptom belonging to several affections that differ from each other in their nature and pathology. These maladies have all the common property of pain, varying in degree and seated apparently or really in the heart. There is, however, no satisfactory term in English usage for designating this pain. On the ground of analogy, it would seem proper to call it cardialgia, after the examples of gastralgia, cephalalgia, etc.; but this word is already appropriated, illogically though it may be, to an affection with which the heart is not concerned at all. Thus, in the *National Medical Dictionary* of Dr. Billings, the first definitions of cardialgia are gastrodynia and heartburn, the last being pain in the heart. In the *Century Dictionary* and in that of Dr. Foster no other meanings for cardialgia are given than heartburn and gastralgia. Dr. Flint says that "cardialgia signifies pain at the cardiac orifice of the stomach, of a burning character";[1] and Dr. Wm. H. Welch, in his very valuable monograph on *Ulcer of the Stomach*, says: "With most English and American writers cardialgia signifies heartburn, while Continental writers understand by it the severe paroxysms of epigastric pain which we more frequently call gastralgia."[2] This usage, though fixed, is certainly contrary to etymology and to the analogy of similar words. *Heart-pain* would suggest its meaning very plainly, but it is not in accordance with English usage; for we do not say head-pain or back-pain; and if headache, backache, and earache suggest *heart-ache*, we are debarred from that word by the fact that since it was included with "the thousand natural shocks that flesh is heir to" it has always been used to denote emotional rather than physical distress. We are therefore driven to the use of the terms "cardiac pain" or "pain in the heart."

This kind of pain is found as a prominent symptom principally in three different forms of disease of the heart; and I desire to refer briefly to these from a clinical rather than from a pathologic point of view.

The first of these, and the one in which the pain exists in most intense degree, is angina pectoris, true angina with increased arterial tension, occurring in paroxysms, and most frequently associated with aortic or coronary disease or with fatty degeneration of the heart. As the name of this affection implies, the pain is of the very essence of the disease itself. In severe cases it is nothing less than a mortal agony—an agony from the very intensity of the pain, and a mortal agony because, as testified by many sufferers, the pain is attended with a sense of impending dissolution. Nothing can better describe a paroxysm of angina than words used by a non-medical writer, and without reference to this disease, in which he speaks of "a sense of ruin which is worse than pain." As recorded by Dr.

[1] Read at the meeting of the Association of American Physicians, held in Washington, D. C., May 24, 25, and 26, 1892.

[1] Practice, p. 443.

[2] Pepper's System of Med., vol. ii, p. 489.

Latham from his own observations, it is "a suffering as sharp as anything that can be conceived in the nature of pain, including something which is beyond the nature of pain—a sense of dying." Keeping in mind this element of the paroxysms, I think Professor Flint's criticism, that "Heberden's term signifying *strangulation* has but little pertinency in this application of it," is, with all deference to his high authority, hardly justifiable; for Heberden speaks of "the sense of strangling and anxiety with which the disorder is attended"—*angor pectoris intentans vitæ extinctionem*; and he seems to use the word angina with reference to these rather than to the pain alone; to the combination of anxiety and anguish found in the disease; words indeed that come from the same root as angina and bear witness to the accuracy of the term as Heberden first employed it.

The structural changes connected with true angina are in a very large proportion of cases those that produce cardiac ischemia, especially insufficiency or atheromatous rigidity of the aorta, obstruction of the coronaries, or fatty degeneration of the heart. Any one of these changes may lessen the blood-supply to the heart-muscle; but only the first two, aortic insufficiency and obstruction, are diagnosticable with certainty by auscultation; we may suspect coronary obstruction or fatty degeneration, but we cannot during life prove their existence. Hence the prognosis of a case of true angina pectoris may be equally as grave when auscultatory examination yields a negative result, as when it discloses organic disease; for the cardiac ischemia on which the disease may depend may be brought about by undetectable coronary obstruction or fatty change. On the other hand, post-mortem examinations not infrequently show great sclerosis of the coronaries, and also fatty degeneration, in cases in which the symptoms of angina pectoris had not been present during life; so that it is difficult to determine what is the immediate cause of the angina, *i.e.*, what is the exact causative relation of the lesions to the symptoms.

A very common factor in the production of a paroxysm, or at least a very common attendant upon the paroxysms in the earlier attacks, is a great and sudden increase of arterial tension. Whatever be the underlying organic cause, the immediate action seems to be purely neurotic, just as it is in Nothnagel's vasomotor angina, coming on after exposure to cold, which produces apparently a spasm of the peripheral arterioles and a sudden feeling of tension or severe pain about the heart; or there may be some unknown reflex influence by which the arterial constriction and increased tension are brought about and the paroxysm excited.

It was this sudden increase of arterial tension that led Lauder Brunton, by a happy inference, to try the effect of amyl nitrite in angina. The action of this remedy in causing flushing was first observed by Guthrie, and its power of lessening tension was first shown by Gamgee, but the application of its power to the particular form of increased tension found in angina pectoris was first made by Brunton, with the well-known results of giving deliverance and safety, at least for a time, to many that have seemed ready to perish. In view of the many cases of angina in which great and prompt relief has been given by this agent, I cannot but feel surprised at the opinion expressed by several recent writers that it is doubtful if there are any remedial agents that have the power to arrest or very greatly relieve a paroxysm of the disease. No therapeutic results seem to me more obvious and satisfactory than those that are often witnessed from the use of this remedy in angina; and I fully agree with Professor F. C. Shattuck, that the value of the nitrites in angina is greater than Strümpell, the author upon whom he comments, would seem to admit.

A second form of cardiac pain closely allied in character to the one already considered, and yet distinct from it in its pathologic relations and generally less intense in type, is encountered as a complication of some cases of chronic nephritis, chiefly the contracted kidney or interstitial nephritis. In this class of cases the changes in the kidneys and sometimes in the heart are parts of a general arterio-sclerosis, and the pain in the heart is probably the expression of resistance to the blood-flow through the arterioles.

If it be asked why, with a constantly present mechanical cause, the attacks should be paroxysmal, with intervals between them, it may be said that this is a law of various neuroses, such as neuralgias dependent on pressure, or epilepsies due to exostosis or depression of bone, or spasmodic asthma due to nasal polypi — all conditions in which the causes are constant and the neurotic seizures paroxysmal. In this form of cardiac pain, the attacks may be frequent, but they are in general less severe (such at least has been my experience) than those of true angina connected with heart-lesions. I have described several such cases in a paper read before this Association at its meeting in 1888. In all of them the symptoms of chronic interstial nephritis existed, and in one of them, in which the painful attacks were most severe and most like those of true angina, post-mortem examination disclosed not only chronic contracted kidneys, but occlusion of the coronaries. It is in cases of this kind that potassium iodide in large doses, as advised by Huchard, may sometimes prove beneficial by lessening the arterio-sclerosis. In the painful attacks, a certain degree of relief may be

obtained from amyl nitrite, which, though it cannot reach the organic cause of obstruction, may lessen an incidental increase of tension.

After all, these two forms of cardiac pain may be essentially one in their pathology—both being dependent upon sclerotic changes. Regarded clinically, however, one group is composed of cases in which there are detectable or suspected organic heart-changes, with no kidney complications; while the other group consists of cases in which the kidney-symptoms are always prominent, while the heart may or may not be involved.

A third form of cardiac pain is found in dilatation of the heart, and is perhaps due to tension and stretching of the nerves in the heart-substance. Traube held that the pain of true angina is due to this cause. Whether it be so or not, the subjects of cardiac dilatation frequently experience pain about the heart, greater in degree in general in proportion to the rapidity with which the dilatation is induced.

Pain may thus arise from any form of valvular disease of the heart that leads to dilatation; but of the various valvular lesions it is perhaps found most commonly in aortic insufficiency, which is likely to occasion rapid dilatation of the left ventricle, from the pressure of the backward current of blood from the aorta, at the same time that the left auricle is sending its supply into the ventricle. It is to be remembered, however, that aortic insufficiency may give rise to some cardiac ischemia by the imperfect filling of the coronaries; and thus there may be two causes of the pain, the ischemia and the intra-ventricular pressure. Which has the larger share in causing the pain, it may be impossible to say.

If dilatation be extreme and acutely developed, free venesection may be the best means not only for relieving pain, but also for saving life.

In all forms of cardiac pain, arsenic is a remedy of much value, from its action as an anti-neuralgic, and from its power of promoting the nutrition of the heart. It has no effect in the way of controlling existing pain, but it may lessen the severity and the frequency of future attacks, and I hold, with Anstie and with Balfour, that there is no more important prophylactic tonic against cardiac neuralgia than arsenic.[1]

Looking at all three of these forms of disease and endeavoring to coördinate them as to their cause, it is quite possible that the chief factor in the production of pain common to all of them is pressure brought to bear upon the cardiac nerves or upon the cardiac ganglia themselves. The connection between these ganglia and the cervical and brachial plexuses gives a ready explanation of the extension of the pain to the arms that may occur in any form of cardiac pain. In the first or strictly paroxysmal form, true angina, the pressure may be occasioned by the sudden tension of the arterioles; in the second form, by the general sclerotic state of the vessels; and in the third form, with dilatation of the heart, by the attenuation of the heart-walls.

[1] Balfour, Diseases of the Heart, page 281.

ORIGINAL ADDRESS.

ADDRESS ON GENERAL MEDICINE.

BY ALBERT L. GIHON, A.M., M.D.,
MEDICAL DIRECTOR UNITED STATES NAVY.

Delivered before the American Medical Association, at Detroit, Michigan, June 9, 1892.

IN accepting the invitation to fill the breach caused by the illness of your appointed speaker on General Medicine, I can but feel that I have imprudently undertaken a weightier task than, at the time, I fully realized. The very flattering terms in which the appeal was conveyed left me no option to decline, and blinded me to the responsibility I was assuming in agreeing to address this great body of experts in medicine on the vital issues involved in the address expected. Hence, I can only ask your indulgence for my shortcoming in begging you, who lead busy lives, to reflect how impossible it is to do in a few short days what is rightfully the careful, deliberate work of preparation for a whole year. What I say, therefore, shall only be in the way of desultory comment on medicine in general, instead of a systematic digest of the year's achievements in the practice of our art.

To me the most gratifying outcome of the year is not the announcement of new therapeutic means, nor the publication of nosologic novelties; with these you are more familiar than I am, for the search-lights of the medical press now leave no dark corners where men may dig and delve for hidden treasures with which, some unexpected day, to startle the world and bring them fame and fortune. He who works to-day stands in an amphitheater, with the whole profession looking and listening, condemning or commending, through their accredited representatives, the fraternity of medical publicists of every nation; and here, as your reporter of the doings of the year, I find it a very pleasant duty to congratulate the profession on the higher standard of medical editorship, which is becoming our national characteristic. Fervid ambition still impels tyros in authorship to engender premature offspring, but, as with all man's progeny, only the fittest survive; we have a body of stalwart adult and veteran periodicalists, who do their work of enlightenment masterfully and in friendly concurrence. If there be any in this assembly who have not studied these living text-books of our science, day by day during the past year, how idle it would be for me to seek to cover their indifference and neglect with the veneer of a twenty-minute random *résumé* of a few prominent occurrences. Perhaps I can perform part, at least, of the duty imposed upon me in no more practical way than by seeking to awaken in the medical body politic a livelier consciousness of some of its obligations outside of the routine duty of the general practitioner.

One of these obligations is the earnest countenance and substantial support of its organs of intercommunication—not merely by subscribing for them, but by contributing to them the results of individual observation, experience, and research, that all mankind may profit by them. Only with such generous and general support can any medical editor, independently and impartially, fill his waste-basket with the crudities and spurious offerings that are poured upon him, and thus become in fact the censor and preceptor the press assumes to be. Eminent distinction in medical, as in secular, journalism is the reward of pronounced merit. Its office requires the highest order of ability, the broadest culture, the widest range of information. If other specialties be the hands and eyes of the profession, this is the silent, thinking brain, which in vaulted attic, away from active participation in the world's affairs, reflects the impulses that go to make up healthy, active life. Without statistics of circulation, I am confident it would be found, as indicating intellectual progress in medicine, that medical periodicals are more widely read and their contents more carefully scrutinized, while their editorial leaders, notes, and criticisms are more independent, fearless, and unbiased. It is enough to enter a physician's office and scan the periodicals—for there should be more than one—upon his table, to judge of his own mental and professional development.

But if a higher order and wider circulation of current medical literature be indicative of the better self-instruction of the adult practitioner, we have reason to congratulate ourselves upon another sign of the medical progress of the day in the reform of the system of the scholastic education of the young entrants in the profession. It is not necessary to detail here what has been done in this direction. The medical press has fully recorded, while it has advocated and encouraged the advance from the old two full courses, dovetailed with the nominal three years' office instruction of our early days, to the splendid system that finds its fullest expansion in this current year. A minimum of three full courses—in many schools four—and these consequent upon prerequisite academic or collegiate tuition, expressed in one university in no unmistakable terms as six years of continuous college tuition for the intending physician, is a prouder achievement in medicine in this year 1892 than all the additions to its pharmacopeia or all the refinements of its therapeutic theories.

The seven grave and reverend professors of our school-days sit still enthroned on their several chairs, but on loftier eminences, for surrounding them are other seven and more to aid in the tasks that have outgrown their own individual capacities. College faculties have grown apace with medicine, and twenty, forty, sixty, more than a hundred busy teachers stand ready to fill with oil the lamps of those that would see far into the mystery of human existence. All the schools have not gone thus far, nor are all the periodicals such grand exemplars as make their own abilities the sole measure of what is fit or unfit, but there are enough of these great beacon-lights in the North and East—at the fountain-heads of our science at the Metropolis, and at that old Quaker City where medicine was early dignified—in the West, and at the farthest South, to attract within the glory of their brightness all whom it were worth attracting. A few years more and it shall come to be an opprobrium not to have been a graduate of one of these real schools of medicine. That this fulfilment may be hastened, it becomes the duty of every member of this body—which should be every member of the profession—by reason of his own lack of early opportunities; by the years he has had to sacrifice to accomplish what he may have done, and often superlatively well done; by his own comprehension of the sublime greatness of this unrivalled science of Medicine, in which, however old we may be, we can have travelled but a little way—to bear testimony of his appreciation of the increasing immensity of the task devolving upon those who succeed us, and to guide these successors of ours where the light is brightest, the road broadest, and the far-off end ever clear in view. He shall serve medicine best who shall see that the young laborer is best equipped for his life-work by natural aptitude, by proper preliminary training, and by a thorough understanding; light and wide and straight as the way may be made, it is long, toilsome, and up-hill before the highest eminence be reached, beyond which still the overhanging firmament ever defies approach.

But a medical man has not done all his duty in supporting, contributing to, and digesting one or more medical periodicals, however able and meritorious, and in advocating schemes of higher medical education. The physician ought not to isolate himself from active participation in the affairs of the community in which he lives, or of the guild to which he belongs. He should manifest his pride in his vocation by encouraging the congregation of all who share it with him in professional societies, both after the American system of municipal, county, State, and National organizations, and in the special associations of those distinctively kindred pursuits—and this not in the trade-union spirit, for mere mercenary ends—but to promote harmony, good-fellowship, and the mutual improvement of men engaged upon the self-same work. While it is not always feasible to leave home and occupation to attend the annual reunions of the great national bodies, it is within the power of every physician to gather together with his professional neighbors—be they but two or three—in friendly concourse. In this American Medical Association are now enrolled about five thousand members and representing about three hundred and fifty societies. Its membership ought to comprise the entire medical profession of America, undivided by schism or sectional interest, and its representatives embrace every State and minor body in the country, with such modification of plan, perhaps, as may bring it more in accord with our American idea of *E pluribus unum*. Without advocating any particular method of accomplishing this object, I only now desire to point the injunction that every graduate in medicine should be in active fellowship with one or more medical associations, whether for individual improvement, friendly intercourse, or social example.

Nor should the pendulum swing too far one way. The doctor should not be only a doctor—else he be deemed in truth but the leech of the caricaturists in semi-clerical garb, with pompous air and gold-headed cane, or the olive-colored garment and Æsculapian badge by which, in recent years, it has been gravely proposed to distinguish him. Social example has a wider field than the

assembly-room of a medical society. The physician should be the first citizen of his commune, peer in education and culture with its highest classes, and leader in all the sociologic and political movements of the day—and this without abating one jot his professional character or neglecting any whit his professional duties. To the young medical man who listens to me, or who may read my words, I would point as the splendid example of the learned physician, who was the exemplary citizen, the active philanthropist, the busy man of the world and jovial companion, as well as the greatest teacher, lecturer, writer, and practitioner of medicine that this country has ever produced—*Benjamin Rush*—and say, Seek to be worthy and useful, honored and respected as he was. Do not bound your horizon by the walls of your office nor limit your intercouse with your fellowmen to interviews with patients and consultations with brethren of the cloth. Everywhere may be seen the first men of the profession sacrificing social amenities and indulgences, and the companionship of their friends and families, upon the treadmill round of office and clinical labor, knowing neither pleasure nor relaxation until the end comes, when the statistician records another unit in the class of early death-rates. In mental occupations, at least, the physician should be omnivorous and polygamous; in the world, and of the world; loyal above all to medicine as his first love, but not blind to other beauties nor deaf to other harmonies. The medical fraternity is singularly reclusive—yet with strange inconsistence chary of hero-worship if its heroes be its own. During the Civil War it was not excelled in loyalty and patriotism. Two of the three founders of the Military Order of the Loyal Legion of the United States were medical men—one happily still with us—and the Grand Army of the Republic was the sole creation of another. The posts of the latter and the commanderies of the former have their full quota of M.D.'s, who had gained their brevets as commanding officers in the field, as well as those who with equal peril and personal bravery rendered their humane offices to stricken comrades. Yet even these men generously applaud successful generals, and remain silent when their own *confrères* ought to be extolled. Within a month I have seen physicians actively canvassing for subscriptions for statues to great military leaders, who have never contributed one dollar to the monument to their own immortal hero, who signed the Declaration of Independence at the peril of his life, who as a member of the Continental Congress braved attainture as a rebel, and who breathed the breath of life into the figure of the new republic whose Constitution he had helped to frame; who died as he had lived, booted and spurred, with his face to the foe, from whom he was striving to protect his fellow-men. This is not the time for me to enlarge upon this strange anomaly of indifference. Besides, it is a sermon I have often elsewhere preached—sometimes, I fear, to unwilling ears.

The intellectual progress in medicine, to which I have alluded as the laudable characteristic of our day, has naturally led to the recognition of preventive medicine as the type of highest medicine; and the fact that I am so committed to this belief made me hesitate to assume the rôle of your annual reporter, lest I trench upon the ground of my friend Dr. Lindsley; for one cannot speak of medicine in this day, without having first of all before him the problem, How can this disease be best averted, which it is our later office to combat? and the more we learn of the nature and cause and history of disease, which the brightest minds are now studiously investigating, the more urgent becomes this problem. I can, therefore, shield my own delinquency behind the assurance that the Address in State Medicine which is to follow, shall cover this very ground.

The discovery of this and that microbic cause, coincident or inevitable consequent of cause, of one disease after another naturally led to the detection of special germicidal agencies for each, and for a time there was an appalling prospect of preventive hypodermatic tattooing, scarcely less repulsive than the disease, and a bravado resolve to let each particular microscopic devil do its worst. Multiplying a million a minute, it was realized that we could be no match for our Lilliputian enemies, when we could not kill by drugs without at the same time killing ourselves. Apace with the bacteriologists' revelations have been the chemists' syntheses, which, however we might be disposed to recommend to our friends and patients, none of us were brave enough to care to take within our own economies. I confess to no intimate familiarity with these latest evolutions of the laboratory, though the names of some I know by sight very well, even if most of them I can neither speak nor spell. Hence it was a gratifying announcement that we had within ourselves our own defenders and defences. "In the blood is the life thereof" began to have greater significance, through the belief that its living cells devoured these countless swarms of intruders, and thus prevented their disastrous inroads.

It was enough for us, then, by tonic and alterative and stimulant and roborant to preserve the appetites of these domestic phagocytes, and see that they were always in sufficient force to patrol the avenues of the circulation. So, the homely phrase of cleansing the blood of its impurities came back like an old friend in a new dress; but already we are called upon to abandon our bio-therapeutics, with its wars of the microbes, and the final victory of good-minded over evil-minded bacteria, as poetic fancy—and now comes the chemist with potencies that are marvellously alike in looks, which set sail on their mysterious voyage in the channels of the blood to neutralize the toxic products of each malefic wound.

Among the pleasantest recollections of my early life are memories of my old preceptor, whose father, himself a favorite pupil of Benjamin Rush, had conferred the latter's name upon his son, which, doubtless, explains my inherited admiration for that wonderful man. I recall how carefully I was indoctrinated with the belief, which I have not been over-ready to abandon, that nosologic nomenclature was a treacherous guide; that diseases were not so many entities for which specific antidotes were to be sought; and that the cardinal points of diagnosis to guide the medical pilot were the grade of action as indicated by the pulse, the state of the secretions, and the condition of the organic fiber. To-day, we go behind these with lens and test-tubes, to ferret the particular microbe, bacterial proteid, or chemical toxine, which has disturbed the circulation, obstructed the flow of the secretions, or irritated, inflamed, or disorganized the basis structure of the tissues.

It would be unpardonable, therefore, in any Address

on Medicine, however cursory and superficial, that one should neglect to give due credit to the bacteriologic investigators, the scope of whose researches embraces not merely the discovery of disease-causation, but the means for its prevention and cure. The busy practitioner, perhaps, has little time to follow diligently the discussions as to whether the bacteria themselves are the real enemies to health, or only the agents for the introduction of their proteid products, or toxalbumins, ptomaïnes, or other chemical toxines, which are the actual pathogeners. He is chiefly concerned as to the practical results of these investigations, and I am fortunately able to lay before you the very latest precise knowledge on this subject, as set forth only a few days ago by that master in this branch of science, my highly esteemed friend of many years, Lieutenant-Colonel George M. Sternberg, Surgeon United States Army, before the Association of American Physicians, at its annual meeting at Washington. I esteem it a high privilege that I am permitted to transmit to you this authoritative statement of the practical results of bacteriologic research.

Until a very late day, admits Sternberg, the bacteriologist's demonstration of the specific cause in a considerable number of infectious diseases had not resulted in the discovery of a specific treatment for these diseases. Preventive medicine has almost exclusively profited by his researches—as when the discovery of the bacterial parasite placed tuberculosis among the infectious diseases, and the destruction of the sputum became a recognized practical necessity. Of the same order are the precautions of modern aseptic surgery and obstetrics—and the use of antiseptics in traumatic infections, and in localized infectious processes. The use of the microscope in the early diagnosis of tuberculosis and diphtheria is a practical result for which the bacteriologist can justly claim credit—as well as the protection of domestic animals by inoculation largely practised in France, and the prevention of rabies in the human subject, even though the specific infectious agent has not been demonstrated.

The chief purport of Dr. Sternberg's valuable paper (which, perhaps, it would have been well for me to have read *in toto* in lieu of anything else) was to present certain late discoveries, which suggest the possibility that we are on the eve of a new departure in the specific treatment of infectious diseases. Sternberg has described 475 species of bacteria, of which 158 species are pathogenic, although all are not differentiated by morphologic characteristics, and the latest discoveries have established the fact that the pathogenic action of those bacteria that have been shown to be concerned in the etiology of specific infectious diseases is due to the formation of toxic products during the active development of the bacterial cells—and to isolate these toxines and toxalbumins is now the attempt.

Recent experimenters, significantly prominent among whom were three Japanese biologists, having demonstrated that the blood of an animal having a natural immunity to anthrax, if injected into the body of a susceptible animal protected the latter from anthrax, it was subsequently found that the blood of animals having an artificial immunity to tetanus or to diphtheria, injected into susceptible animals, in like manner protected these against the effects of the injection of virulent cultures of the bacilli of tetanus or of diphtheria; finally, Dr. Rudolf Schwartz, assistant at the surgical clinic at Padua, reported the actual successful treatment of an advanced case of traumatic tetanus, by injections of *tetanus-antitoxine*, obtained by Professor Tizzoni from the blood-serum of a dog that had been rendered immune to tetanus; and three other cases of success with this same treatment elsewhere have since been reported.

Since Behring's experiments, in Sternberg's opinion, suggest the possibility that the potent toxalbumin of the diphtheria-bacillus may be neutralized in the bodies of infected animals, and the Klemperers have shown the probability that the blood-serum of animals having an artificial immunity to cultures of the *micrococcus pneumoniæ crouposæ*, when injected into other susceptible animals, renders them immune, Sternberg indulges the hope that croupous pneumonia in man may be arrested by a similar mode of treatment. He further says, from analogy based upon experimental evidence, that the successful treatment of tuberculosis appears to call for the administration of *anti-tuberculin* rather than for that of the active toxic principle elaborated by the tubercle-bacillus. Animals that have an artificial immunity to rabies as a result of inoculation with an attenuated virus, owe this immunity to the presence of an antitoxine in their blood or tissue-juices; and Tizzoni and Schwartz, in January of this year, state their belief that the antitoxine of rabies may probably be substituted for Pasteur's inoculations with an attenuated virus, not only with the object of preventing the development of rabies in man after the bite of a rabid animal, but also that it may prove to be curative after the symptoms of rabies are developed.

Ehrlich's experiments with pathogenic toxalbumins not produced by bacteria, but of vegetable origin, Sewall's showing that immunity from poisoning by rattlesnake venom may be produced by injections of small doses of its toxic agent, and others, give strong support to the view that all infectious diseases are due to the action of substances resembling the toxalbumins already discovered, and that acquired immunity to any of them is due to the formation of antitoxines in the blood of the immuned animal; but while in many infectious diseases the toxalbumin is produced by a specific microörganism, we have no evidence that that this is the case in the strictly contagious eruptive fevers, and none to justify a generalization that all infectious diseases, as smallpox and scarlet fever, are due to specific microörganisms. Sternberg suggests the possibility that in these diseases the toxalbumin which gives them their specific character is a product of the living cells of the body of the infected individual, and says the inference is justifiable that the blood and tissue-juices of an individual who has recently suffered an attack of smallpox or scarlet fever contains an antitoxine that would neutralize the active poison in the circulation of another person immediately after infection, and he holds the experiment warrantable to ascertain whether a small quantity of blood drawn from the veins of the protected person would suffice to arrest or modify the course of these diseases. The transfusion of a moderate amount of such blood might be curative, or confer immunity in advance of infection, and possibly an antitoxine may be obtained from the blood of vaccinated calves that would have a curative action in smallpox. Dr. Sternberg has himself demonstrated by recent experiments with the blood of vaccinated calves that

there is something in this blood that does neutralize the specific virulence of vaccine virus, both bovine and humanized.

I can hardly close without a passing reference to the malady that is on every tongue and is credited with the virulence of a plague—the influenza—the influence, whose mysterious grip upon the physically strong and robust, as upon the feeble and frail, leaving all alike mentally and bodily prostrated, has been attributed to some occult cause acting upon or through the nervous system. It, too, is now known to have its bacterium—the latest microörganism to be discovered, unless the verification of the Berliner Hospital experiments shall give that distinction to the alleged bacillus of measles. The bacterial proteid of influenza has not yet been isolated, and when it is, and its antitoxine shall be demonstrated and successfully administered with curative results, a new era shall indeed have begun in general therapeutics.

Certainly, when prevention and cure shall thus go hand-in-hand, the high estate of preventive medicine can never more be questioned, nor that the wise physician's higher office shall be to guard this glorious human body—the crowning work of the Divine artificer—against these enemies from without, rather than wait to undo their malefic work. If we cannot construct the simplest living cell, how can we hope to intelligently reconstruct one?

Granted this, when disease does invade the body, whether by neglect or ignorance, or deliberate defiance of Nature's laws, shall we idly contemplate the evil and do nothing to mitigate, if we cannot wholly eradicate it? While the world endures, man's folly, as well as woman's, shall furnish work enough for practitioners of the healing art, both general and special, and to them a word of felicitation on their share in the progress of medicine toward a higher level.

The intelligent general practioner is the intellectual primate in our profession—not a mere man of all work, ready to do any job after a crude fashion, without much understanding of its *rationale*. Nevertheless, however universal may become the requirements and opportunities and results of higher medical education, it can hardly be expected in this land of unlicensed liberty, that the class of medical tradesmen can ever be entirely banished; and it may be necessary to establish distinctions, as in other countries, even if it be to surrender to them the all-comprehensive title "Doctor." Medical Examining and Licensing Boards are the coarse sieves that do the preliminary sifting, but medical associations must, perhaps, become the means of ultimately determining, by rigid requirements of fellowship, which are the men who stand upon the same level, and this the higher one—and this very higher level is what has given necessary occasion to specialism. The expert specialist is the natural aid to the expert general practitioner—his ally, not his opponent and rival, the body of specialists being the planetary attendants upon the central luminary that animates and impels them, and only subordinate in that each revolves without interference in its appointed orbit, the whole making one system. That this dignified and exalted recognition of the correlation and reciprocal dependence of the several parts of our profession is coming to be the general understanding is, I think, our greatest reason for self-satisfaction at this time.

THERAPEUTIC NOTES.

The Alkaloids of Opium.—In observations upon animals and upon man as to the comparative utility of the various alkaloids of opium, Leubuscher (*Deutsche medicin. Wochenschr.*, 1892, No. 9, p. 179) found that, next to morphine, papaverine exerted the most active sedative influence upon the movements of the bowel. Narcotine was below papaverine in activity. Narceine and codeine proved entirely ineffective. Thebaine acted as an intestinal stimulant. The administration of papaverine in doses of from one-sixth to a half grain, subcutaneously or by the stomach, to individuals whose bowels had previously acted normally, was followed by no constant results. In some persons, transient constipation was induced; in others, no apparent influence was exercised upon the bowels. In adults with diarrhea, the results were not more conclusive. In children, however, better results were obtained, even large doses occasioning no disturbance of consciousness or respiration, of circulation or of appetite.—*Wiener medizin. Presse*, 1892, No. 14, p. 550.

Elecampane-root and Helenine in the Treatment of Leucorrhea.—Parisot (*Essai Thérapeutique sur l'Hélénine : son emploi contre la Leucorrhée*) records the conclusions arrived at from the employment of helenine (obtained from elecampane-root) in twenty-seven cases of leucorrhea. The drug was found to be but slightly toxic. Upon mucous surfaces and atonic ulcers it acted as a local stimulant; in excess, it proved to be caustic. In catarrhal endometritis, daily doses of from a third of a grain to a grain of helenine were followed by improvement in the color and consistence of the discharge, and by its ultimate disappearance. The remedy only acted upon the leucorrhea symptomatically. The primary condition must be treated in accordance with the existing conditions.—*Rev. Gén. de Clin. et de Thér.*, 1892, No. 14, p. 214.

The Treatment of Asthma.—At the onset of a paroxysm, by means of a brush an application of a 5 per cent. solution of cocaine hydrochlorate is made to the nasal fossæ as high as possible, or the nares and throat may for four or five minutes be sprayed with the same solution. Should the attack not be aborted, from six to twelve drops of pyridine on a handkerchief should be inhaled. If the attack has reached its acme, a twelfth of a grain of morphine hydrochlorate is administered hypodermatically, and if necessary repeated at an interval of a quarter of an hour. For the constitutional condition, potassium iodide, belladonna, and arsenic are indicated. In case of emphysema, baths of compressed air should be employed.—Dieulafoy, *L'Union Méd.*, No. 48.

For Chlorosis.

℞.—Ferri et ammonii citrat . . . gr. xv.
Aquæ destillat. } . . āā fʒj..—M.
Aquæ laurocerasi }

Sig.—mxv hypodermatically—once daily for a week, then twice daily.

Bongiovanni, *Journ. de Méd. de Paris.*

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SATURDAY, JUNE 18, 1892.

THE AMERICAN MEDICAL ASSOCIATION.

AT its Forty-third Annual Meeting, in Detroit, decidedly "REPORTS PROGRESS." The venerable DR. DAVIS frankly said that in all respects it was the best meeting the Association had ever held:

First, because of the unexcelled hospitality of the profession and citizens of Detroit. Never before has a whole people seemed so pleased to open doors and hearts to so many visiting friends. In some respects there was a true embarrassment of riches, and in one unfortunate instance there was a failure in understanding—whose fault now matters not—whereby the notification of a most charming entertainment offered the visiting ladies completely failed to reach them, resulting in a double disappointment to would-be hosts and willing guests. The Reception Committee, with DR. CONNOR (who has the love and honor of all) at its head, must be voted the sincerest thanks of all visitors. And it would also seem invidious not to mention the hospitality of MESSRS. PARKE, DAVIS & CO., whose courtesy and bounty must by no means be viewed as due entirely to commercial enterprise.

But more important still remains the solid value of the scientific work done. Everyone agreed that the section work had never been on a higher plane or more thorough. It was a truly remarkable fact that the echoes of the great political contest synchronously going forward in a neighboring city were hardly heard or thought of by this great body of scientific men gathered for a different and, as we believe, a higher and a purer purpose. No allurement, social or political, held the attention from consideration of medical science and progress.

It is impossible that all of the sections should show an equally high achievement, and while none fell below excellence, some, and notably the sections on ophthalmology, surgery, laryngology, and obstetrics, raised the standard of work to a level that future meetings may look back to as models.

But of yet greater and more far-reaching significance was the business and ethical work done in the general sessions. Indications—nay, proofs—were at last emphatically given that the days of the medical politician are numbered, and that the tremendous majority of the members are tired of him and his ways, that they are heartily sick of commercialism masquerading as medicine, and wish to make an end of the everlasting bow-wow and intemperate wranglings altogether too characteristic of the past general sessions, and not entirely absent from those of this year. By the vote to hand over without question the business interests of the Association to an Executive Committee, the members signified their denunciation of the waste of time, of the too great absorption of interest, and of the unseemliness and dearth of dignity of the unwieldy general session.

One other suggestion should be conveyed to those called upon in future to deliver the general addresses: Make the reading shorter! The rush for the doors when a long address is to be read should teach that condensation would hold a greater number of hearers, and insure better attention. Would it not, indeed, be better to abolish the general addresses altogether, or all but one, or let them be confined to the sections in which they properly belong? Section-work is more important than the general addresses, and the demands on the time of the section-worker are becoming so great that the less important factor should give way. There has often been an element of self-seeking and self-advertising in the address that does not square with the new spirit. Work, and not talk, is manifestly to-day's ideal. The manner in which this will be realized is by emphasizing the value of section-work and limiting the interest in the general session. By the delegation of general business to the newly-formed Executive Com-

mittee, mobocracy, wrangle, and general swash are to be replaced by parliamentary government and civilized methods of conducting business. Henceforth the sections are autonomies and govern the general body.

Office and honors should seek the man, and it should be held a positive disgrace for one to commend himself and "wire-pull" to get himself appointed to office of any kind.

Affairs pertaining to the *Journal* of the Association have reached a critical stage. Simply in the interests of good journalism it may be said that nowadays marked ability—editorial certainly not excepted—must be well remunerated. The official organ of the Association should be placed in a unique position, both of trust and power. This it can never have so long as editorial responsibility is hampered by political chicane, and so long as the editor has not power to select, abridge, or exclude reading-matter according to his judgment. If he have not such power he is ruled from without; if he may not be trusted with such power, he is not fitted for his post. The adoption of the plan of publishing accepted papers in separate volumes by each section would make it no injustice to individual members for the editor to be vested with an authority that alone can give him an opportunity to make the *Journal* a fitting mouthpiece of American medicine.

A profound cause for congratulation is to be found in the unanimous indorsement of DR. COHEN'S resolution, sent up from the Philadelphia County Medical Society and the Pennsylvania State Medical Society. This is a sharp, clear lesson to the concoctors of secret nostrums and those misnamed physicians who have consented to become their sales-agents, and especially to those editors of so-called medical journals who sell professional soul and honor with the sale of their editorially-controlled columns to the proprietors of secret preparations.

It is to be regretted that as a body the American Medical Association did not set the seal of its unlimited condemnation upon the KEELEY craze. We well know that it cannot turn aside from its true work of positive science to silence every despicable cur of quackery that may bark at its heels. But in this instance Keeleyism is a national disgrace, and we have a duty to the community and to the future that must not be shirked. All honor to DR. DEWEY, and especially to DR. MOVER, for plain, true words manfully outspoken at an opportune hour.

There yet remains the unhealed wound, the division of the New York State Medical Society. What should be the final decision of the committee appointed with the evident purpose of promoting "secondary union," it is not fitting at present to say. If peace is to be the outcome, let it be "peace with honor." It is unjust to both sides to look for a compromise of principles that must leave the vital question at issue really undecided.

Divested of all accidentals and non-essentials the question is simply, May a physician in good standing consult with an irregular, especially with a homeopath? The position of THE NEWS has been freely expressed. So long as the irregular limits his therapeutic practice to any special law except the law of the cure of disease, it is simply useless to advise with him; no result can come of it. It is dogmatism and unscience to pretend that disease can be cured by only one law, whether that be allopathic, homeopathic, or what not. The true physician aims to cure by any means whatsoever, and he is not a physician who cares more for the method of cure than he does for the fact of cure. But beyond this, of course, as we all know, is the ethical question involved in consultation with a man who for gain gives lip-service to a therapeutic creed but practises *not* according to his creed. How any committee can make it right to consult with such a hypocrite—allopathic or homeopathic—is beyond the limits of our casuistical understanding.

At the same time we admit that the rights of permanent members of the American Medical Association who retain membership in the New York State Medical Society, but personally respect and obey the law of the American Medical Association, ought not to be abridged. Having become members when their society was in good standing, their personal conduct, not that of their society, should govern their present status.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-third Annual Session, held at Detroit, June 7, 8, 9, and 10, 1892.

(Continued from page 669.)

GENERAL SESSION.

THIRD DAY—JUNE 9TH.

RESOLUTIONS passed by the Pennsylvania State Medical Society denouncing the insertion of patent-medicine advertisements in medical journals, and especially in the

Journal of the American Medical Association, were read by the Secretary. The resolutions also criticised the practice of members of the profession giving certificates of indorsement to proprietary remedies. The reading of the resolutions was greeted with applause and they were heartily indorsed by the convention.

DR. WILLIAM PEPPER, of Philadelphia, was presented by President MARCY, and as President of the coming Pan-American Medical Congress, he briefly addressed the convention on the importance and plans of the Congress. He expressed the hope that the Congress would promote good feeling and aid in the dissemination of medical knowledge over the Western Hemisphere.

A resolution was passed thanking the Hon. John Sherman and members of the Senate Committee on Foreign Relations for securing the passage of a bill favoring the Congress.

President MARCY announced the following Committee on Revision of the Code of Ethics: Dr. H. D. Holton, of Vermont, *Chairman;* Dr. H. D. Didama, of New York; Dr. Dudley S. Reynolds, of Kentucky; Dr. D. A. Nelson, of Illinois; and Dr. Benjamin Lee, of Pennsylvania.

The President announced the following committee to confer with a committee from the New York State Medical Society concerning the relations of the members of that Society with the American Medical Association: Dr. N. S. Davis, of Chicago, *Chairman;* Dr. J. H. Rauch, of Illinois; Dr. W. T. Briggs, of Tennessee; Dr. D. S. Reynolds, of Kentucky; and Dr. W. P. King, of Missouri.

A resolution directing the attention of the Trustees of the *Journal* to the fact that the Code of Ethics prohibits all commendatory mention or advertisement of secret preparations, and instructing the Trustees to respect such prohibition in the future conduct of the *Journal* of the Association, was passed.

The Trustees reported that they had held four meetings during the year, there being an unusual amount of business to attend to. The schedule of rates of advertising in the *Journal* had been increased more than 100 per cent. The board contemplates a number of changes, among them the cessation of paying commissions on subscriptions. The *Journal* has been enlarged, but from the increase in the advertising patronage it is thought a press and a folding machine can be bought, so that the *Journal* will be printed entirely with its own type and machinery. A balance of $1797.43 remained on hand after all indebtedness had been paid.

The Treasurer, DR. RICHARD J. DUNGLISON, of Philadelphia, reported a balance of $3076.48 on hand.

The Librarian, DR. GEORGE W. WEBSTER, of Chicago, reported that he had received during the year 1200 medical journals, pamphlets, etc. He had an offer from the Newberry Library of Chicago to bind and render accessible a large amount of material belonging to the Association and stored away in Washington. The Library offered to hold the books in trust and turn them over to the Association on demand. The Librarian was instructed, by resolution, to enter into a satisfactory arrangement. Members of the Association were requested to donate books and other literary matter to the library of the Association.

The Rush Monument Fund Committee reported $3000 on hand, and made an urgent appeal for more funds.

On motion of DR. REYNOLDS, of Kentucky, the Secretary was instructed to send copies of a resolution endorsing the efforts of the American Medical College Association in advancing medical education, to the medical colleges, journals, and societies.

DR. TONER, of Washington, called the attention of the Association to the fact that the centennial of the discovery of vaccination would occur May 14, 1896, and offered a resolution that a committee of five be appointed to arrange for a proper celebration of the occasion; that one day of the session of 1896 be set aside for the presentation of papers pertaining to the celebration, and that, if possible, the Association meet that year in Washington, so that the exhibits and documents on the subject of vaccination will be available. The resolution was unanimously adopted.

DR. A. L. GIHON, Medical Director United States Navy, delivered the Address on Medicine. (See p. 692.)

FOURTH DAY—JUNE 10TH.

On motion, the Paddock Pure Food bill was tabled.

DR. R. HARVEY REED, of Ohio, as Chairman of the Committee on Incorporation, reported that the committee desired further time, and invited members of the Association in favor of incorporation to appear before the committee and state their reasons. Further time was granted.

A motion to constitute a Section on Benevolence was tabled.

A motion to constitute an Orthopedic Section was laid over for one year, in accordance with the Constitution.

On motion of DR. R. H. REED, a committee of five was appointed by the Chair to audit the accounts of the Rush Monument Committee.

The committee appointed last year to consider the resolutions of the West Virginia State Medical Society concerning railway and contract surgeons reported that it had made an exhaustive study of the subject. As nearly as could be ascertained there are about 6000 railway surgeons in the country, of which 1200 are members of the Association of Railway Surgeons. The committee had found it true that railway surgeons often took charge of cases regardless of ethics or of the rights of the physician first called, or of the family attendant. True, the patient, if conscious, had the right to choose his own attendant, but the railway company said to him, If you do not take our surgeon you must pay the bills. The railway company had no right to force their surgeon on the patient, nor had the patient the right to force his surgeon on the railway company. That many railway surgeons worked for inadequate pay the committee found a fact. The committee considered the evil too strong to attack without vigorous measures, and recommended that the Association discourage it and endeavor to prevent it from growing worse. The report of the committee was received and adopted.

DR. C. A. L. REED, of Cincinnati, offered a resolution amending the Constitution so as to admit to membership physicians of Canada and the British North American provinces. The resolution was laid over for a year.

A motion that after July 1, 1897, no one should be admitted to membership in the Association unless he had studied medicine for four years, was laid over for a year.

The report of the work of the Judicial Council was made by its Chairman, DR. JAMES F. HIBBERD, of Richmond, Ind.

The Nominating Committee recommended the following officers for the ensuing year:

President.—Dr. Hunter McGuire, Richmond, Va.

Vice-Presidents.—Dr. H. O. Walker, Detroit, Mich.; Dr. Hawkins Brown, Hustonville, Ky.; Dr. Henry Jones, Watertown, Conn.; Dr. Jessie Haines, Sacramento, Cal.

Treasurer.—Dr. Richard J. Dunglison, Philadelphia.

Secretary.—Dr. William B. Atkinson, Philadelphia.

Librarian.—Dr. G. W. Webster, Chicago, Ill.

Trustees.—Dr. Alonzo Garcelon, of Maine; Dr. Patterson, of Washington; Dr. Leartus Connor, of Michigan; Dr. Perry Millard, of Minnesota.

Judicial Council.—Dr. Cartilidge, Kentucky; Dr. Didamer, New York; Dr. Roberts, New York; Dr. Morris, Baltimore; Dr. Emmert, Kansas; Dr. Davis, Georgia.

To deliver the Address in Medicine: Dr. Hobart Amory Hare, Philadelphia. In Surgery: Dr. H. H. Mudd, St. Louis. In State Medicine: Dr. Walter Wyman, Washington, D. C.

Dr. Hugh O. E. Wingate, of Milwaukee, was appointed Chairman of the Committee of Arrangements.

Milwaukee, Wis., was selected as the next place of meeting, on the first Tuesday of June, 1893.

The President appointed the following committees:

Memorial: Drs. Toner, Davis, Didama, Hibberd, and Wood.

Rush Auditing Committee: Drs. Shoemaker, Berry, and King.

Committee of Conference with Canadian Profession: Dr. C. A. L. Reed, Cincinnati; Dr. W. E. B. Davis, Rome, Ga.; H. O. Walker, Detroit, Mich.; Dr. J. P. Lindsley, Nashville, Tenn.; Dr. Leartus Connor, Detroit, Mich.

The Address on State Medicine was delivered by Dr. J. P. Lindsley, of Nashville, Tenn. He reviewed the fatal epidemics at New Orleans, and the benefit to the city of the cleaning up given it by the Federal troops during the war. He then spoke of the epidemics from which Tennessee had suffered. The prevention of disease and its cure he found two very different things. The annual meetings of the American Public Health Association and the Ladies' Public Health Association of New York are great aids in the cause, as are also the magazines of the country. Medical science is fast becoming public property. The Federal Government is, strange to say, the most laggard of all civilized nations in protecting its people from disease.

A vote of thanks was tendered Dr. Lindsley for his address.

A vote of thanks was tendered Dr. H. O. Walker, of Detroit, Chairman of the Committee of Arrangements, to the profession of Detroit, and the Michigan State Medical Society, for the right royal entertainment tendered the Association.

SECTION ON SURGERY AND ANATOMY.

THIRD DAY—JUNE 9TH.

Morning Session.

DR. HERMAN MYNTER, of Buffalo, N. Y., read a paper entitled "Is Amputation Ever Indicated in Coxitis?" He stated that primary amputation is being gradually abandoned for excision. He considered only secondary operation, when the caries has recurred and the discharge has increased. The apparent recurrence is probably only a continuance of the original trouble, and unless the whole of the diseased shaft be removed, even if the wound heal, a useless joint will be the result. Two cases were related to show the benefit of removing all of the diseased structure, plugging the acetabulum with iodoform-gauze, and continuing drainage for some weeks by means of a counter-opening posteriorly to the original incision. In both cases a good, firm, movable joint, with one inch and one and a quarter inches of shortening respectively, was the result.

DR. RIDLON stated that unquestionably in the majority of cases the trouble began outside of the joint, in the bone, and the lack of ability to locate the focus of the disease raised the question as to the wisdom of operating or awaiting the results of local treatment. Of course, if the patient is growing worse, he should be operated on. Unless one can be sure that he will be able to remove all the diseased tissue and cure the case without relapse within the time in which wounds usually heal, it is a question whether the operation and the chances of septic infection should be taken. Dr. Ridlon is prejudiced against operation, unless as a life-saving measure.

DR. ANDREWS, of Chicago, thought that in a large proportion of cases, after suppuration has commenced, excision will be the best way out of the difficulty; but this may not be absolutely necessary to life, as has been demonstrated by cases that have done well without excision. Such cases, however, recover more quickly after operation. Dr. Andrews favors increased employment of operative procedures, but there are exceptions to all rules.

DR. MYNTER referred his excellent results to the great care in removing every portion of the diseased tissue. He did not get primary union and did not want to, as he thought the wound did better if packed with idoform-gauze and allowed to granulate.

DR. T. A. MCGRAW, of Detroit, Mich., read a paper on "The Cremasteric Reflex in Varicocele." He stated that the cause of varicocele has never been satisfactorily explained. A peculiar formation of the veins in the vicinity, great muscular action, and excessive venereal excitement are recognized as causes, and yet many men are subject to all of these without having varicocele. Local injuries, rendering the vessels incapable of performing their function in propelling the blood onward to the heart, is undoubtedly a cause. In some persons there is a natural tendency to a varicose state of the veins. These cases may be considered incurable. The assistance given to the general venous circulation by the related muscles is well understood, but the fact that the circulation in the spermatic veins is largely dependent on muscular contraction seems to have been forgotten. Every man would have a varicocele if it were not for this contraction. Among the muscles concerned, the cremaster muscles are the chief. They cannot contract without squeezing the blood out of the veins, and this is their true and only important function. The force acts from below upward, and the contraction proceeds probably from the irritation excited in the veins

by their distention. In later life the walls of the veins become more unyielding and can better afford to be without support. A vigorous, young man, putting all his power into some supreme effort, powerfully contracts his abdominal muscles, and if at the same time the cremaster muscles likewise powerfully contract, the blood, shut off, must either burst the vein or stretch it beyond repair. In the one case an hematocele, and in the other a varicocele will result. The cremaster muscle varies much in different men, and in some cases seems to be wholly absent. Cases of varicocele that are ascribed to excessive venereal excitement are probably due to a paresis of the nerves of the cremaster. Though in a few cases of varicocele the cremasteric reflex is nearly or quite normal, in the majority of cases there is decided disturbance in the mechanism by which it is engendered. Dr. McGraw takes issue with those authorities that ascribe to hernia the power of producing varicocele. The following conclusions were arrived at: 1st. That the pathology of varicocele is variable, cases differing from one another, both as regards cause and pathologic conditions; 2d, in one group of cases the fault lies in the walls of the veins, which have become weakened either by injury or from congenital or acquired disease; and 3d, in another class of cases the primary diseases involve either the cremaster or the nervous mechanism by which it is controlled; these cases are marked by a deficiency in the cremasteric reflex.

DR. MYNTER, of Buffalo, asked if the knowledge that the cremaster muscle may influence the production of varicocele would have any bearing on the treatment.

DR. MCGRAW replied that this would depend upon whether or not the varicocele were due to paralysis; if so, electricity might be used; but if the cremaster is wholly absent, removal of the scrotum would be the best treatment. This support, however, cannot make up altogether for the intermittent support of the cremaster muscle.

DR. DE GARMO, of New York, stated that he could confirm two of the points made. He has very carefully watched the effect of pressure as a cause of varicocele and has seen many cases with hernia, but he does not think that either has anything to do with the production of varicocele, even if bad trusses are worn. He could not recall any case of varicocele coming on late in life, and has never seen a case from strain. He had a case of combined hernia and varicocele, which was operated upon by another gentleman for the latter and the hernia was cured.

DR. MCGRAW concluded by saying that his paper had reference only to the pathology. He had refrained from saying anything about the treatment.

The Secretary, DR. F. W. MANN, read the paper on "Visceral Phlebotomy," by GEORGE HARLEY, of London, Eng. Two illustrative cases were reported. In the first case the liver was punctured to a depth of eight inches in a patient dying from the combined effects of a greatly enlarged, hard, and inflamed liver, ascites and marked anasarca. Recovery followed, with no return of the disease. In the second case, the liver, enlarged and inflamed, and the seat of strumous abscesses, was likewise punctured. A copious hemorrhage took place through the bile-ducts into the intestine. The liver became smaller. A perfect cure resulted. Pulmonary phlebotomy is the most difficult form of visceral phlebotomy, the constant movement of the lungs making it difficult to close the wound; but it has been done with great benefit to the patients. Dr. Harley recommended the performance of visceral phlebotomy on every accessibly situated internal organ in preference to leeching and cupping.

DR. F. J. THORNBURY, of Buffalo, read a paper on "Advances in Aseptic Surgery."

Afternoon Session.

DR. C. E. RUTH, of Muscatine, Ia., read a paper on "Gunshot Wounds of the Cerebrum," in which he reported several cases demonstrating that, contrary to the generally-accepted idea, a bullet in the brain can be probed for and successfully removed, and that, with careful and delicate manipulation, there is no excuse for puncturing the normal brain-tissue in the search for a ball. Several instruments were exhibited that had been made especially for this department of brain-surgery. As a result of operations and experiments in this line of work, the following conclusions were reached: 1st. That a ball can be followed in its course through the brain; 2d, having been followed to its point of impact on the opposite side of the skull, a trephine disc should be removed, drainage be established, and the ball removed, if possible; 3d, that that probe is best that gives the greatest resistance to penetration, with the least possible lateral friction on its shaft by the collapsed canal; 4th, that a hemispherical front porcelain-tip and an aluminium shaft answer the indications for lead-detection (resistance if of proper size, weight, etc.) required in a probe, better than anything else; 5th, that one intending to follow balls through the brain should thoroughly familiarize himself with the resistance that the normal brain offers to penetration by the probes he expects to use, that he may know when he is applying force within safe limits; 6th, that he should frequently grasp and remove balls and pieces of bone with the forceps of his choice, on the cadaver, before attempting it on the living human subject.

DR. EDWARD MARTIN, of Philadelphia, read a paper on "Air in the Veins," based on experimental work on dogs and monkeys. It was found impossible to have an animal aspirate air into the veins. Even by opening the jugular vein of a dog, and creating a vacuum in the chest, it was impossible to have air sucked in, owing to the collapse of the vein; though if the vein be hardened by disease or artificially prevented from collapsing, the entrance of air is possible. Even if a few bubbles were aspirated, it did no harm. In the monkey, however, the result was quite different, the animal dying in thirty or forty minutes when air was aspirated. In the human being, aspiration of air is one of the most dangerous events that can happen. Dr. Martin related that he had once wounded the axillary vein, and two or three times heard a suction-sound. He was convinced that this was due to air in the tissues and not in the vein, as no evil consequences followed. In the principles of treatment, no advance has been made over the suggestions contained in the writings of Senn. When a vein is opened, the treatment is simply mechanical, and consists in controlling the circulation from the wound to the heart.

DR. B. MERRILL RICKETTS, of Cincinnati, presented a report of a "Case of Talipes Equino-varus." A boy, fourteen years old, fairly well nourished from time of birth, presented talipes equino-varus in a most aggravated form.

The foot was turned straight backward, so that the weight of the body came directly upon the astragalus. As a result, the plantar surface of the foot was thrown upward to such a degree that the under surface of the toes was the only part that touched the ground in the erect posture. It was stated that the left foot at birth had been in as bad a condition as was the right, but by manipulation the deformity had been corrected.

Upon examination it was found that the ankle-joint of the left foot would allow of more than a normal extent of motion in all directions.

In the operation antiseptic precautions were taken. A Barton's bandage was applied, to make the operation as bloodless as possible. An incision was made from the lower extremity of the fibula in the direction of the lower extremity of the tibia, exposing the ligaments and tendons of the joint. These tissues were not divided, but crowded aside to facilitate the removal of the astragalus, which was found greatly deformed, having lost its outlines. An attempt was then made to bring the toes forward to their normal position, but not successfully. The little remaining part of the Achillis tendon being very dense, it was necessary to divide all of the tissues posteriorly, before the foot could be brought forward to its normal position. The plantar fascia was so dense that it had to be divided in order that the foot could remain in its normal position. The foot was retained in position by means of straps, which it was found exerted too much pressure, so that they were removed at the expiration of the fourth day.

The temperature remained below 100° after the tenth day; on one occasion having reached 104°. Recovery was thence uninterrupted, the foot keeping its normal position without support. The boy was on crutches at the expiration of four weeks, and left the hospital at the end of ten weeks. A shoe is now worn, and he goes about with the aid of crutches.

DR. RIDLON, of New York, stated that there are certain cases of congenital club-foot that could not be cured without excision of the astragalus, although some claim that all cases can be cured by stretching and dressing, and others claim that all can be cured by tenotomy. He related a case in which both of these methods had been carefully employed without success. Finally, the astragalus was removed and found to be wedge-shaped posteriorly, which accounted for the difficulty in keeping it in place. The result was perfectly satisfactory.

DR. SAYRE, of New York, stated that he would not go so far as to say that all cases of club-foot could be cured without removal of the astragalus, but he had never seen a case that required excision. Even if the astragalus is distorted, the bones are at first soft and malleable, and if the foot is put in the correct position they will be moulded. He has seen advanced cases in persons of from twenty-six to forty-six years of age, who had been without treatment since childhood, and had always found that section of the ligaments and all holding soft tissues, combined with great force in putting the foot in the normal position, had been sufficient. No case should be considered cured until it can be retained in position without apparatus. Something may be said for operation if the patient cannot afford the time for the slower treatment.

DR. B. MERRILL RICKETTS, of Cincinnati, read a second paper, entitled "Amputation of Scrotum and Circumcision." He reported the case of a white American, twenty-two years old, well developed, both mentally and physically, of nervous temperament, without syphilitic taint, or predisposition to tuberculosis, whose scrotum and prepuce were enlarged and much thickened. The parts were covered with papillomatous growths, varying in size from pinheads to that of a large pear, with also an occasional angioma. The right leg was also covered with these growths. A bandage had been worn on the leg for a long time. Upon removal of the bandage the leg would immediately swell to twice its normal size, with a characteristic glistening appearance. It was thought that if these growths were disturbed, or the skin punctured, an exudation of lymph would take place, and from five to thirty ounces escape. This fluid was of the color and consistency of thin cream, slightly tinged with blood. It was bitter, and crystallized on evaporation.

The man gave a history of having, at the age of eighteen months, an abscess in the right groin, from which time his trouble dated. Every year he would have from three to four chills, followed by a rapid rise in temperature, which would range from 103° to 104.2° for from twenty-four to forty-eight hours. These attacks were preceded by enlargement of the limb, loss of appetite, glassy eyes, inactive mind, constipated bowels, and great tenderness in and about the right iliac fossa. The glands in this region were greatly enlarged. Circumcision and scrotomy were advised, and readily assented to. Circumcision was first performed, with the understanding that should it be followed by bad symptoms the scrotum would not be operated on. No unpleasant symptoms appeared, and two months afterward the second operation was performed without any difficulty. During the following year the man had but two or three chills, followed by fever. He gained in flesh, and felt entirely satisfied with the operation. The operation was performed rather as a palliative than as a curative measure.

DR. B. MERRILL RICKETTS, of Cincinnati, also presented a paper entitled "Neurectomy of the Great Sciatic Nerve for Painful Neuroma as the Result of Gunshot Injury." He reported the case of a tinner, twenty-seven years old, who presented a history of excruciating pain for two years, after having been shot through the leg. He had become addicted to the morphine-habit, taking a maximum of fifteen grains daily hypodermatically.

Examination showed that the ball (of thirty-eight caliber) had passed obliquely through the left leg to the inner side, three or four inches above the condyle, anteriorly to the tendon of the biceps, passing upward at an angle of forty-five degrees, and coming out at about the middle of the thigh externally. The patient stated that when shot he perceived the sensation in his toes, and not at the site of injury. He removed his shoe, expecting to find an injury of the foot, but was quite surprised to find the injury higher up on the leg. Within an hour after

the injury the pain was equally distributed over the foot and leg below the knee.

In the operation the necessary aseptic precautions were taken; the man was anesthetized, and a rubber bandage was applied from the toes upward. An incision, four inches long, was made in the median line, encroaching posteriorly on the popliteal space, exposing the nerve, which was found enlarged to three times its normal size for a distance of one and one-half inches. The nerve divided much higher up than usual. This was fortunate, for had the arrangement been normal both branches would have been divided. The internal branch was the injured one. The external branch was adherent to the internal for a distance of three inches. A section was made one and three-quarters inches long, including the entire enlargement. When the section was made the leg was flexed, and retained in this position by means of straps. A drainage-tube was introduced, and the wound was closed by silk sutures. The tube was removed at the end of the third day, and the cutaneous stitches at the end of the fifth day. The temperature rose to 100° on two different occasions, and remained at about 99° during the course of recovery. The pain gradually subsided. The morphine was withdrawn, and small doses of bromide and chloral were given instead. After the twelfth day the man was allowed to be up and around on crutches. He left the hospital on the twenty-second day, remaining free from all pain and the morphine-habit.

DR. GEORGE E. FELL, of Buffalo, N. Y., read a paper entitled "Forced Respiration (Fell Method) per Face-mask and Tracheotomy in Diphtheria." He called attention to an interesting case of diphtheria occurring in a family of four young children, all of whom were taken down with the disease. The first child was given home-treatment and recovered, while the second, under similar treatment, without the knowledge on the part of the parents of the seriousness of the disease, passed to a rapidly fatal condition. Dr. Fell was called and proceeded to perform tracheotomy. The patient, a boy of seven years, becoming unconscious from cyanosis, it was unnecessary to give an anesthetic. Before the operation had proceeded far, the onset of asphyxia was indicated by rapid dilatation of the pupils. Had it not been for the forced-respiration apparatus that had been provided, the patient would have died immediately after the initial incision; it was found necessary before the operation of tracheotomy was completed to apply the forced-respiration apparatus some five or six times after auto-respiration ceased. Subsequently, forced respiration was kept up through the tracheotomy-tube for some time before the patient became conscious. Hydrogen dioxide was freely used in the mouth and nasal cavities with gratifying results, and also to the tracheal incision. Many times, when dyspnea became great, the liquefaction of the membranes in the bronchial incision was brought about by the remedy so as to relieve the patient. In some instances, when this would not relieve the patient, forced respiration through the tracheotomy-tube overcame the cyanosis and enabled the patient to breathe for himself for some period of time. The exudation, however, continuing to interfere with the respiratory process, the patient succumbed some sixty hours after the operation was performed. The case illustrates the value of forced respiration by means of the face-mask in conditions in which membranous exudates interfere with respiration, and in membranous croup and diphtheria; and also the value of hydrogen dioxide in liquefying the exudates in such conditions.

DR. H. O. MARCY, of Boston, by means of stereopticon slides, gave a number of "Illustrations of Methods of Operating in Hernia." These pictures were from the engravings of the old masters, one edition having been engraved as early as 1756. The plates were from Gay, Sir Astley Cooper, Langenbeck, Scarpa, and Bougeray, and the points of interest in each were briefly brought out.

DR. W. H. MYERS, of Fort Wayne, Ind., read a paper entitled "Treatment of Compound Fractures," laying particular emphasis on antiseptic and aseptic treatment. He presented statistics showing the great decrease in mortality since the introduction of these methods. He does not employ drainage. He believes the ideal dressing to be that which affords the most perfect rest; therefore after thorough antiseptic cleansing he closes the wound with protective, applies several thicknesses of bichloride gauze, and then completes the dressing by plaster-of-Paris bandages. These are allowed to remain for fourteen days or longer, unless there are indications to the contrary. Amputation is often too hastily resorted to, and especially is this noticeable along railway lines. The surgeon should remember that upon his decision the future of the patient depends. A case was related in which two and one-half inches of the tibia were carried away. Four pieces of bone were removed and carefully replaced after the wound had been cleansed. An immovable dressing was applied and allowed to remain for twenty-eight days. The patient made an uninterrupted recovery, and his condition was all that could be desired.

DR. RICKETTS, of Cincinnati, stated that he had read two papers in which he took the ground that in cases of fracture the surgeon has a right to make an exploratory incision if there be doubt as to the character of the injury. If, in a case of compound fracture, the dislodged bone can be returned and union be secured, there is no reason why, if there be two or more fragments, the surgeon should not cut down and wire the pieces. In the majority of cases wire should be used to keep the pieces in position.

DR. RIDLON, of New York, stated that he had heard some surgeons say that bones will not unite if the periosteum is not in place. He could not understand why this should be, if, in abdominal surgery, portions of the peritoneum are taken off and nothing is thought of it.

DR. NORTH, of Michigan, related that he had seen a great deal of railroad surgery. He strongly advised against the use of the knife if it can be avoided, even if the products of ulceration flow out of the wound. Even a year afterward an operation can be successfully performed.

DR. RICKETTS, of Cincinnati, added that in operations on the skull the button of bone is returned, without the periosteum, and union takes place.

DR. GRIFFITH stated that he had used decalcified chips of bone, and had bone develop from them, and he did not think the periosteum was necessary.

DR. MCCAUL, of Michigan, related a case of trephin-

ing, in which he returned the button without the periosteum, and the wound is perfectly sealed to-day.

DR. EMMETT, of Iowa, stated that there is no question about bone-grafts growing. He had seen cases in which Senn's decalcified bone-grafts were used with perfect success.

The Chairman, DR. GASTON, stated that his observations in this line confirmed the views to which he had just listened. He related a case of extensive suppuration along the tibia, denuding two-thirds of the anterior part of the bone of its periosteum. Amputation was proposed, but it was decided to wait, and to-day the case promises complete recovery.

DR. EMMETT related a case of which he had read, in which a patient with a seriously injured foot was advised to have it amputated, but refused. Gangrene set in, and the leg had ultimately to be amputated above the knee. The man sued the physician for $5000, claiming that it was the physician's duty to use his own judgment. He won the suit, and the Supreme Court sustained the decision, saying that the physician was liable for damages, as the patient did not know whether the limb should be operated on or not.

DR. NORTH inquired as to the course to pursue if, in spite of every treatment, non-union continues.

DR. DUFFIELD, of Detroit, stated that if the Supreme Court of the State of New York decides that a patient can say he will not have his limb amputated, and then holds the surgeon responsible for not operating, the surgeon occupies a peculiar position. He had always contended that the patient should decide. The best way is to call counsel, tell the patient the decision, and if he refuses to abide by it let him get another surgeon.

DR. RICKETTS, of Cincinnati, replying to Dr. North, stated that mercuric chloride in large doses internally would cause union of the bone.

DR. MYERS stated that he has had good results from sawing off the extremities of the bone and nailing them together. He had seen Mr. Macewen, of Glasgow, after trephining, break up the button into small fragments and replace them.

DR. RIDLON, speaking of non-union, referred to two cases of compound fracture in which non-union persisted, in spite of all the numerous plans tried. His plan was to put the limb in position and hold it there, preventing motion laterally and longitudinally, and then constrict the limb above the point of injury by a band, producing edema about the injured part. The legs were allowed to hang down, and in both cases union was perfectly solid.

DR. MILTON, of New York, related a case of non-union cured by the patient being allowed to use the leg.

DR. GRAVES, of Michigan, thought that cases of so-called non-union were really cases of delayed union.

The CHAIRMAN reported a case of non-union cured by forcibly rubbing the extremities of the bone together so as to excite inflammatory action.

DR. EDMUND ANDREW, of Chicago, read a paper entitled "The Powerful Effect of Sulphonal in Arresting the Cramps of Fractured Limbs and other Reflex Spasms." He stated that he had first observed the remarkable anti-spasmodic power of sulphonal in a case of painful cramps from a recently fractured femur. Fifteen-grain doses arrested the spasms both when the patient was awake and when he was sleeping. In another case, one of slight fracture of the spine, the patient, whenever he fell asleep, was harassed by cramps of the intercostal muscles adjacent to the injured vertebræ. Sulphonal in fifteen-grain doses completely arrested the trouble. As the drug is slow in action, it is best in nocturnal spasm to give it two or three hours before sleeping-time. Eight-grain doses three times a day have given excellent results in nocturnal seminal emissions. Perhaps the remedy would act well in premature ejaculations in copulation. Two cases of obstinate hiccough were arrested by its employment. A gentleman long troubled with nocturnal cramps of the legs and thighs, increasing with age, got relief from fifteen grains taken before retiring. After two months one dose sufficed for nearly a week. In ten weeks he no longer required the remedy. A young man who had sustained a severe contusion of the right sciatic nerve, suffered from a constant painful, jerking motion of the thigh and leg, resembling chorea. Two fifteen-grain doses of sulphonal completely arrested the distressing movements. From the foregoing it seems that the anti-spasmodic power of sulphonal is of more importance than its sleep-producing influence.

DR. BROOKS, of Iowa, stated that he had sustained a fall, resulting in a severe synovitis, which caused sudden spasmodic contractions of the muscles of the leg during sleep. Sulphonal was prescribed and the spasms were relieved from the first.

DR. MURPHY related the case of a pregnant woman who suffered much at night from cramping in the legs. He prescribed sulphonal and nearly always found that only one dose was necessary to obtain relief. He has used the drug in two other cases, with excellent results.

DR. JAMES A. WORK, of Indiana, has a patient to whom he has been giving sulphonal for rheumatism, attended with cramps of the legs at night. The remedy acted admirably, but the question has been asked if there was not danger of the establishment of a habit. It is a relief to know that as the case progresses less of the drug is administered.

DR. J. P. STRITTMATTER, of Philadelphia, stated that he has found the drug useful in the low, nervous form of typhoid fever, accompanied with jactitations. He related a case in which there had been no sleep for six days. Twenty grains of sulphonal were given and the patient slept for twenty-four hours, only being aroused to take food. Recovery was thenceforth uninterrupted.

DR. S. L. MCCURDY, of Dennison, O., read a paper entitled "Amputations in the Light of Mechanical Science *versus* Prothetical Science." He expressed the view, contrary to general teachings, that joint-amputations made better stumps than amputations above the joint. He gave as reasons, 1st, that the broad articular extremities of the bones made the more durable stumps; 2d, the knobs formed by the condyles at the knee and by the malleoli at the ankle, furnish points about which the socket can be adjusted, preventing the objectionable pumping motion of a cone-stump; and 3d, artificial-limb makers can and do make limbs for disarticulations. Dr. McCurdy considers that Syme's operation makes the best and most comfortable stump possible. Sawing off of the condyles and malleoli is a misguided step; every surgeon should do disarticulation if he felt assured the mechanic could fit the stump. Artificial-limb

makers should make their limbs so as to have the bearings upon but four points: 1st, the ankle, as in Syme's; 2d, below the knee, or about the head of the tibia; 3d, the knee; 4th, the perineum.

DR. ANDREWS inquired as to the use of an artificial foot after Pirogoff's operation.

DR. MCCURDY replied that this operation should not be made at any time, but a good foot can be made for this operation.

DR. KING, of Missouri, disagreed with almost every point made in the paper, basing his objections on considerable experience in railroad surgery. He considered the cone-shaped stump the best. The patient is not expected to walk on the end of the stump. He made it a rule, whenever he could, to go above the joint.

DR. CRAIG, of Pennsylvania, stated that he had made a special study of the surgery of the lower extremity, and he agreed with Dr. King. The effect of saving the joint after removing the ball of the foot is to make the man a permanent cripple. Dr. Craig believes that every foot to be removed near the ankle-joint would be better removed half-way between the ankle and knee.

DR. MCCURDY agreed that the proper thing to do, if one has to go above the ankle-joint, is to go several inches above; but he said that he found artificial-limb makers who do make a foot to fit Syme's amputation.

DR. JOHN B. ROBERTS, of Philadelphia, presented a paper on "The Cosmetic Surgery of the Nose." He called attention to the ignorance of the non-professional public on this subject, which leads many sufferers to resign themselves to unsightly deformity. A plea was made that physicians discourage the correction of such disfigurements and undertake operative measures for their relief. Slight operations will often effect an astonishing change in the personal appearance of the patient, and even extensive operations are devoid of danger. No marked scarring occurs if the operations are properly done. Oblique incisions, antiseptic precautions, primary union, and the location of the incisions in grooves of the skin make external wounds unnoticeable. In addition, many of the operations are done within the nose, the interior of which is reached by the nostrils or through the mouth under the upper lip. No cosmetic surgeon will be successful who does not recollect the frequency of tertiary syphilis of the nose. Unless its frequent occurrence is constantly in mind, he may undertake to excise gummata and allow destruction of the nose from syphilitic ulceration. All doubtful cases should be tested with large doses of mercury and potassium iodide. The various deformities of the nose that can be successfully treated, and the means that the surgeon may employ for their correction were described. All sorts of twisted and crooked noses were said to be amenable to properly directed operation. The correction of the sunken and distorted organs due to syphilis was a prominent subject of consideration; and methods of inserting metallic bridges in substitution for the bony bridge were detailed.

DR. ERNEST LAPLACE, of Philadelphia, presented a paper on "Operative Procedures at the Base of the Brain," in the course of which he stated that the base of the brain is contained in three different fossæ, each of which is separate and on a different plane from the others; but each can be reached with the trephine. To open the anterior fossa the trephine must be applied immediately above the supra-orbital arch, at its junction with the temporal ridge.

A set of malleable platinum-wire instruments, flat and wedge-shaped, are used for separation of the dura from the skull, and can be gently pushed over the rugosities of the skull, so as to reach all parts of the floor of the anterior fossa.

For the exploration of the middle fossa the trephine is applied on a line extending from the middle of the zygomatic process to the external angular process of the frontal bone.

The posterior fossa may be reached by applying a trephine immediately above the external occipital crest to the right or the left. This exposes the cerebellum below the lateral sinus. These operations were successfully performed on dogs. The chief advantage resulting from them will be the thorough application of scientific drainage in cerebral injuries, for the brain, being enclosed in a bony box, cannot expand when irritated or inflamed; hence the absolute necessity of a point of least resistance whence drainage can take place. Hemorrhage is to be controlled with iodoform-gauze packing, or by gnawing off the edge of the bone and applying a hemostatic forceps. Strychnine is to be relied upon chiefly to restore physiologic equilibrium. Illustrative of the principles outlined, the case of a boy was reported who ran a fencing-foil under his left eye through the sphenoidal fissure into the brain. Consciousness was lost, and right hemiplegia and aphasia followed. Fifteen days after the accident the middle fossa of the brain was reached by trephining, and the platinum-wire instrument (a miniature egg-beater) insinuated as far as the cavernous groove, a teaspoonful of clotted blood being withdrawn. Improvement soon followed, and the case made a complete recovery. A remarkable feature was the amount of serous oozing from the trephine-opening, giving evidence of the great intra-cranial tension.

SECTION ON PRACTICE OF MEDICINE.

THIRD DAY—JUNE 9TH.

DR. W. W. PENNELL, of Fredericktown, Ohio, read a paper on "The Genesis of Croupous Pneumonia," which will be published in THE MEDICAL NEWS.

The Nominating Committee reported that they had selected the following as members of the Executive Committee of the Section: To serve for one year, DR. H. A. HARE, of Philadelphia; for two years, DR. I. ATKINSON, of Baltimore; for three years, DR. N. S. DAVIS, JR., of Chicago. The report was adopted, and the members named were declared elected.

DR. CHARLES G. STOCKTON, of Buffalo, was elected Chairman, and DR. GEORGE WEBSTER, of Chicago, Secretary of the Section for the ensuing year.

DR. J. M. ANDERS, of Philadelphia, read a paper on "Cardiac Indications and Contra-indications in the Treatment of Acute Lobar Pneumonia." He alluded to the well-known fact that in acute lobar pneumonia the cause of death is usually heart-insufficiency. This failure of heart-power is attributable to the operation of one or all of three etiologic factors. Of these, the effect upon the heart of the ptomaïnes in the blood produced by the growth of the pneumonia-coccus is the most

potent. These toxic substances exercise a more or less pernicious influence in all cases of pneumonia, and in a great many instances are the chief, or even the sole, cause of death. When brought about in this manner, cardiac exhaustion demands the exhibition of salol or other antiseptics, as well as such cardiac stimulants and tonics as alcohol and strychnine. Digitalis is to be recommended only when the pulse becomes very rapid, fulfilling the important indication of facilitating the nutrition of the heart by lengthening the period of the diastole. High temperature should be reduced by the application of cold to the surface, both locally and generally. Such internal antipyretics as phenacetin, antifebrin, and antipyrin are to be eschewed.

The second influential factor in effecting exhaustion of the heart's power is overfilling and consequent dilatation of the right ventricle, associated with congestion and edema of the non-consolidated portions of the lungs. As the right heart is chiefly affected it will require close attention. It was insisted upon that the effect of the toxic matters in the blood on the heart always predisposes to exhaustion of the right ventricle.

The indications, in such instances as these, are to lessen the work of the right heart, on the one hand, and to restore, as far as possible, the heart's power on the other hand. Cupping and leeching are measures designed to remove some of the burden from the right ventricle, and in aggravated forms of collateral fluxion free bleedings from the median basilic vein are to be recommended. Arterial relaxants have recently been highly recommended to accomplish the same object, but with the possible exception of nitroglycerin, which in small doses acts as a cardiac stimulant, they have no legitimate place in the treatment of pneumonia. To support the heart the use of digitalis was advocated, as this drug increases the capacity of the heart for labor. Alcohol in moderate doses is useful, and strychnine in full doses is of the first importance. Inhalations of oxygen are to be employed when cyanosis persists despite the use of the measures mentioned.

The third influential cause of death is the formation of "heart-clot." In lobar pneumonia there is a greatly increased tendency for the blood to coagulate, and cardiac thrombi of large size are of more frequent occurrence than is generally supposed. The formation of such clots is likely to be followed by cardiac exhaustion, cyanosis, and a rapidly downward course to a fatal termination. A feeble right heart and a sluggish pulmonary circulation probably precede and facilitate such formation in many instances. To prevent this unfortunate accident, as well as to aid in resolving the thrombi, the preparations of ammonia, which tend to maintain the fluidity of the blood are to be employed. In addition alcohol, strychnine, and digitalis should be administered. The last, however, should be employed cautiously.

DR. BEATTY, of Kentucky, called attention to the fact that phenacetin is not objectionable as an antipyretic, because it does not affect the heart unfavorably. He thought that venesection is never indicated. He advised the use of ammonium preparations, but thinks that they have no influence upon clots already formed. Digitalis has more value than all other remedies combined, when there is obstruction to the circulation.

DR. TRUAX, of New York, expressed himself strongly in favor of venesection in suitable cases. It is the most valuable agent in overcoming obstruction to the circulation. It will save hundreds of lives.

DR. HERRICK, of Cleveland, expressed his want of agreement with the current theory as to the cause of pneumonia; and stated that upon our belief in the cause will depend our treatment. The antecedents of pneumonia begin in the abdominal cavity—in the organs of digestion and assimilation.

DR. PENNELL, of Fredericktown, Ohio, called attention to the fact that while Dr. Anders believed the cause to be specific, the treatment recommended was non-specific. When the right heart is wearied, he said, stimulation does no good; the heart must first be relieved by venesection.

DR. DIDAMA, of New York, spoke favorably of venesection in certain cases.

DR. MUSSER, of Philadelphia, stated that each case is a study by itself, and may easily require very different treatment than others. The disease is specific and infectious, but there is as yet no specific treatment. The three measures to be employed are cold, bloodletting, and rest. Every case is, however, not suitable for venesection. When in the early stages the respirations become accelerated and the temperature elevated, bloodletting may be indicated, though the physical signs may not indicate extension of disease. Rest is to be secured by careful nursing and the use of opium. Strychnine is at times most valuable. If heart-failure be imminent, nitroglycerin is valuable. Alcohol and ammonia are preferable to digitalis.

DR. W. F. HUTCHINSON, of Providence, R. I., read a paper on "Darwinism and Disease," in which he referred to a number of the remnants of development, such as the coccygeal gland and appendix vermiformis. The different processes of degeneration, he said, are simply vital processes gone wrong. Tumors vary in frequency from lipoma to carcinoma, because that is the order of difficulty of cell-imitation. Hypertrophy and regeneration demand still greater effort on the part of the cell.

DR. E. L. SHURLY, of Detroit, read a paper on "The Analogy between Acute Idiopathic Pleuritis and Acute Articular Rheumatism." He maintained that there is a basis for such an analogy on embryologic grounds. He reviewed the symptoms of the two affections, showing how pleurisy and rheumatism develop under similar circumstances, and yield to the same treatment. In some cases reported in Germany, by Köster, the effusion subsided under treatment with salicylates in from five to seven days. Dr. Shurly referred to cases of pleurisy and acute rheumatism that he has seen develop under similar climatic conditions.

DR. STOCKTON, of Buffalo, referred to a case in which pleurisy, instead of endocarditis or pericarditis, developed in the course of an attack of rheumatism.

DR. ATKINSON, of Baltimore, stated that post-mortem results do not bear out the conclusions announced by Dr. Shurly. Pleurisy *per se* cannot be accounted for on a rheumatic theory. In cases of acute pericarditis there is often found a pleuro-pericardial friction. Possibly, therefore, in cases of supposed pericarditis the lesion may really be one of pleuritis. Doubtless the

association of the two diseases is, nevertheless, more common than has hitherto been supposed.

DR. SHURLY stated that he did not mean to say that all cases of acute idiopathic pleuritis are of rheumatic origin, but he wished simply to call attention to the analogy between the two affections and to their relatively frequent association.

DR. GEORGE E. FELL, of Buffalo, read a paper entitled "Additional Evidences of the Value of Forced Respiration (Fell Method) in Opium-narcosis." He stated that it was now five years since he first saved a life by systematically respiring for a human being by forced respiration, when the methods in vogue at that time were inadequate to accomplish similar results. Since that time, nineteen human lives have been saved by the method, although it has not been generally utilized by the medical profession. Dr. Fell deprecated the statement that any "unskilled person" could perform forced respiration with success, and related an instance in which intelligent physicians, who were not specially acquainted with his apparatus, were unable to use it without instructions. He also stated that the use of the apparatus could be taught to the crews of life-saving stations or to crews on board ships, so that, after proper instruction, it might be utilized in the saving of many lives that would otherwise be lost by drowning. He also refuted the statement as to the similarity of the method first used by him to that used in the laboratories in operations upon animals, and called attention to the fact that there were nine marked points of difference of practical import between the apparatus devised by him for forced respiration upon man and that used upon dogs in vivisection experimentation.

Dr. Fell reported the twentieth case saved, in which a young woman had been rescued by forced respiration after taking twenty grains of morphine; Case 21, in which an old woman died after having taken an excessive dose of gum opium, although forced respiration was kept up for some thirteen or fourteen hours; Case 22, in which a woman had taken forty-four quarter-grain tablets of morphine dissolved in a glass of water, and whose life was saved after some four hours' work by forced respiration; Case 23, in which three ounces of laudanum had been taken by a prisoner with some sweet spirit of niter, life being saved after four hours' forced respiration and the removal of about eight ounces of blood to relieve the intense cerebral congestion that existed; Case 25, in which a gentleman who had been given up by the surgeons at the Fitch Hospital, Buffalo, and who was in a very precarious condition, was saved by the application of forced respiration for about four hours. These cases thus saved, it was claimed, could not have been saved by any other method than the systematic and regular introduction of air into the lungs by forced respiration.

Dr. Fell expressed a desire that reports of cases of forced respiration be sent to him at Buffalo, N. Y., as he desired to make a full report of results at the next meeting in Milwaukee.

The apparatus consists of a double bellows, which keeps up a steady current of air—three or four movements are sufficient for inspiration, and three for expiration. To the bellows is attached rubber tubing. The air is forced into the lungs through a mask, and escapes by a valve connected with the tube.

The paper of DR. M. M. LEAHY, of Chicago, on "Epilepsy," was read by title. It was contended that, although the cause of epilepsy is yet obscure, not less than two-thirds of all epileptics are incurable. In hospital and general practice, both in Europe and in the United States, some measure of success has been obtained from treatment.

If the exciting cause be compression of the brain, or a lesion of the spinal cord, the chances are largely that the former will be followed by softening of the brain or idiocy, and the latter by paralysis, both terminating fatally.

If the patient be the offspring of intemperate, tuberculous, rickety, or syphilitic parents, he may be relieved; the fits may be stopped for months, possibly for years at a time; but the chances are not in favor of a permanent cure.

When, however, the exciting cause is a simple disturbance of some part of the alimentary canal, or of the secretory apparatus, liver or kidneys—an irritation of the pneumogastric nerve—the chances are decidedly in favor of a permanent cure.

The greatest attention should be paid to the idiosyncrasies of patients, no two persons requiring precisely the same medical and hygienic treatment.

The greatest obstacle in the way of permanent relief to those who are curable is an unwillingness to continue treatment sufficiently long. The fits once stopped, both the patient and his friends regard any effort to induce him to continue treatment as a collusion of physician and druggist to defraud him of his money. The fits return, of course, and the physician is held responsible.

Is it Utopian to hope that, at no distant day, it may be possible to convince the State of the necessity of providing ample hospitals where all epileptics may be carefully and scientifically treated, and where all that are curable may be kept until they are cured?

A paper on "Europhen; with Clinical Reference to Europhen and Europhen-aristol," by Dr. JOHN V. SHOEMAKER, of Philadelphia; and another on "A Few Notes on the Mechanical Therapeutics of Osseous and Medullary Lesions of the Spine," by DR. THOMAS H. MANLEY, of New York, were read by title.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

THIRD DAY—JUNE 9TH.

Morning Session.

In the discussion of the papers of Dr. Ashton and Dr. McMurtry, DR. G. BETTON MASSEY stated that he had devised a method of electric illumination for the pelvis, by which the presence of pus could be diagnosticated, pus being less translucent than healthy tissue.

DR. JOHNSON ascribed adhesions and intestinal obstruction to bad operating. The pain from such adhesions is often great, leaving the patient worse after operation than she was before. Perfection in diagnosis would avoid delay.

DR. MARTIN advised omental grafts, covering the raw surfaces of stumps, and early bowel-movement, to avoid adhesions.

DR. RICKETTS stated that he had seen good results from strychnine in preventing intestinal paresis.

DR. E. P. DAVIS regarded a knowledge of the behavior of the peritoneum in the presence of substances

used in abdominal surgery of great importance. Experiments have shown that iodoform is least irritating; and next in order is boric acid. The gauze-drain is better than the glass tube; a case was related in which a glass tube, left in the peritoneal cavity, was forced out by the peritoneum. The peritoneum of animals differs from that of the human subject.

In closing, DR. ASHTON expressed the opinion that adhesions are unavoidable. Raw surfaces should not be left. The omental graft and early bowel-movement could not prevent adhesions. Strychnine, in doses of one-fifteenth of a grain, given three times daily, hypodermatically, for several days before and after operation, is of value. The peritoneum of dogs is easily made septic.

DR. MCMURTRY urged early operation in cases of fibroids in which the tumor is soft, grows rapidly, and hemorrhage is excessive.

DR. ERNEST LAPLACE, of Philadelphia, read a paper on "The Microörganisms of the Diseased Endometrium and Surgical Interference." He stated that experiments performed in Koch's laboratory, in Berlin, showed that microörganisms are present in the normal endometrium, as well as in the cervix uteri. In inflammatory conditions the same organisms were detected, but in much larger quantities, not only in the secretions, but also in the mucous membrane proper and in the submucous fibrous tissue. Normally, the microörganisms present seem to do no particular injury, but under the reactionary congestion incident to cold, they develop rapidly, and induce a pathologic condition. The gonococcus of Neisser was found deep in the mucous layer. This evidence points to the necessity of scraping and thorough disinfection for the relief of such a condition, and a subsequent thorough disinfection and sterilization of the parts with the acid sublimate solution 1 : 2000, and then packing with iodoform-gauze. The identity of some of the microörganisms detected could not be recognized; two of them were found to be pathogenic to guinea-pigs.

In the discussion, DR. MASSEY urged the value of electricity in decomposing a mercurial solution applied to the uterus, thus bringing the antiseptic in immediate contact with the tissues.

DR. VANDER VEER urged the importance of thorough dilatation before curetting. He employs the douche-curette, and afterward hot boric acid solution, packing the uterus with iodoform-gauze. In septic cases, if no improvement follows, he would not delay longer than forty-eight hours opening the abdomen.

DR. MORRIS stated that he employs hydrogen dioxide after curetting.

DR. NELSON stated that he dilates thoroughly, curettes, douches the uterus with a hot antiseptic solution, and finally applies iodine.

DR. GORDON stated that he uses the sharp curette, followed by bichloride, 1 : 2000, dilating repeatedly while curetting; he then applies pure carbolic acid. He puts the uterus in a good position to secure drainage.

DR. ASHTON considered disease of the appendages a contra-indication for dilatation and curetting when gross lesions are present and the uterus is fixed; otherwise diseased appendages do not constitute a contra-indication. The sharp curette is used.

DR. LAPTHORN SMITH emphasized the value of the gauze drain.

DR. E. P. DAVIS stated that he had employed injections of creolin and green soap, 10 per cent., with good results in cleansing the vagina before labor. If vaginitis or endocervicitis has existed, one copious bichloride douche should be invariably given after labor.

DR. S. O. GORDON, of Portland, Me., read a paper entitled "Hysterectomy Without Pedicle." He operates by ligating the broad ligament with catgut, severs the ligated tissue, employs the over-and-over stitch down each side; ligates the uterine arteries, and dissects off the bladder and uterine attachment behind. He lifts out the entire uterus and sutures the peritoneum. He reported twelve cases, with a death from secondary hemorrhage two weeks after operation.

DR. EASTMAN presented a record of sixty-five operations performed by his method. He employs his staff to raise the uterus, leaves his silk ligatures long, pulls them down and sews the serous surfaces together. He thinks it exceedingly difficult to cleanse the vagina; he cauterizes the cervix or packs it with gauze. While the Trendelenburg position is useful in some cases, he has noted the following disadvantages: pus and retained secretions in a fibroid uterus may run into the abdomen; in a recent case dropsy of the retinæ followed. In large tumors he applies the elastic ligature, and removes the bulk of the tumor first; then he extirpates the cervix. When skilfully performed, the mortality of total extirpation of the fibroid uterus should not be greater than that of ovariotomy.

DR. VAN DE WARKER would limit total extirpation to selected cases. Many need no operation. Rapidity in operating is essential. Puckering the broad ligament should be avoided, as ligatures are likely to slip. The broad ligaments constitute the only source of serious hemorrhage; if they are secured, the cervix needs no ligature.

DR. MARTIN urged the selection of a method to fit the needs of the case. Total extirpation removes the cervix, which is the center of support for the vagina; hence vaginal fixation of the cervix is best.

DR. NELSON expressed the view that fibroids are sometimes cured by ergot, pregnancy, the menopause, electricity, and oöphorectomy. Hysterectomy requires rapidity of operation; the broad ligament should be ligated in small portions.

DR. JOHNSON stated that he would remove only the diseased portion of the fibroid uterus, leaving the cervix.

DR. BAER stated that he considers fibroids incurable except by operation; patients suffer constantly from them. Operation should be performed in all well-defined cases, if the patient intelligently consents. Total extirpation is to be avoided if possible. The broad ligament should be ligated, and the pedicle dropped. The stump may be left without covering. The cervix should be left, if possible. The stump should not be constricted if dropped.

Afternoon Session.

DR. GEORGE M. EDEBOHLS, of New York, read a paper "On Combined Gynecological Operations." He stated that the tendency of modern gynecology is to progress in a surgical direction. The uncertainties and

unreliability of other methods of treatment, as compared with the results obtained by surgical measures, are proverbial. With the rapid strides forward of surgical gynecology, this contrast is daily becoming more accentuated. Increased confidence in results growing from increased experience and progressive skill will incline the individual operator more and more to trust to surgical resources. Many cases require more than one gynecologic operation to effect a cure. All gynecologic operations required in a given case should at the present day, as a rule, almost without exception, be performed at the same sitting. The patient has a right to expect this from the expert claiming to possess the highest degree of operative skill. That this will be the standard of the near future there seems no doubt.

Success in combined gynecologic operations presupposes first of all perfect asepsis and a not too prolonged anesthesia. The duration of the latter need but very rarely exceed one and a half hours, even in the most difficult cases. Other things necessary are the requisite degree of operative skill and dexterity, sufficient and efficient assistance, a perfect technique in the various operations attempted, and an instrumentarium suitable for rapid work.

Combined gynecologic operations may be divided into two general classes:

1. Combinations into which laparotomy does not enter.
2. Combinations of which laparotomy forms a part.

The expert operator should be able to perform any required combination of operations of the first class within the time limits of safe anesthesia. The same statement holds good of the combinations of operations of the second class into which a *simple* laparotomy enters. When a *difficult* laparotomy forms part of the combination, the patient's interests may occasionally be better served by operating at two sittings.

To cite an example from practice, Dr. Edebohls has a number of times, in cases of complete procidentia uteri performed curettement, amputation of the cervix, anterior colporrhapy, colpo-perineorrhaphy, and ventrofixation of the uterus at one sitting, doing the five operations within seventy-five minutes.

As a result of his experience and success with plastic work he considers total extirpation of the uterus for prolapsus justifiable only under very exceptional conditions.

There is no excuse for a mortality in combined operations of the first class. The mortality of combinations into which laparotomy enters will depend upon that of the intra-abdominal operative interference required.

The paper concluded with a frank recital of failures in combined gynecologic operations.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., read a report of "Five Cases of Ovarian Tumors with Twisted Pedicle; with Remarks." In each case gangrene and septic infection developed, as they did likewise in one case of uterine fibroids with a twisted pedicle. All were incorrectly diagnosticated; all recovered after operation. In one case the movement of a child on the lap of the patient caused the rotation of the tumor.

In the discussion of Dr. Edebohl's paper, DR. CURRIER stated that combined operations are not possible for all operators, and with patients who bear ether badly. In many cases delay is preferable.

DR. MARCY stated that he operates rapidly, and uses animal suture (kangaroo tendon). Recently he removed some silk ligatures that had given rise to the formation of vesical calculi.

DR. EASTMAN stated that if the stumps of the broad ligament are brought down after total extirpation of the prolapsed uterus, prolapse of the vagina will not occur.

DR. NELSON expressed the opinion that abdominal pain arising after sudden exertion in a patient having an ovarian tumor, followed by peritonitis, is a sign of twisted pedicle; an operation should be done at once.

FOURTH DAY—JUNE 10TH.

Morning Session.

DR. A. VANDER VEER, of Albany, N. Y., presented a paper "On the Management of Cancer of the Uterus, Complicated by Pregnancy, with Report of a Case."

He stated that pregnancy and uterine carcinoma are conditions, fortunately, rarely associated. Winckel, Stratz, and Sutgin, in nearly forty-two thousand cases of pregnancies, in three great obstetric clinics, saw but twenty-two cases complicated by carcinoma of the uterus.

Consulting obstetricians see relatively more cases than do general practitioners, and apparently see as diverse results of treatment. The late Dr. Fordyce Barker reported three cases in which living children were delivered at term, the mothers recovering from childbed without serious drawbacks. Other obstetricians of equal skill have seen this complication followed time after time by death of the mother. Puchett saw five of twenty-seven cases die undelivered during labor; nine, shortly after delivery; ten recovered from labor, and in three the results are not stated. Omitting the three cases in which the results are not given, we have a maternal mortality of 58 per cent. plus.

Cohnstein found a maternal mortality of 57 per cent.; Hermann, in one hundred and eighty cases, found a maternal mortality of 40 per cent., 20 per cent. of these dying before delivery took place. To consider the subject more accurately, of nearly three hundred women suffering from this complication, and in labor at end of gestation, 52 per cent. died undelivered or never left their beds. The maternal mortality is not materially lessened by abortion and premature delivery. Sepsis after delivery of the fetus, from absorption of unhealthy and non-cicatrizing granulations, or from retained placenta, is responsible for a large proportion of the deaths; postpartum hemorrhage and rupture of the uterus are responsible for still another proportion. Few that survive the ordeal of delivery live three months.

Are the conditions less favorable for the children? Only 33 per cent. of the foregoing series were born living, and hardly 20 per cent. lived until the mother left childbed.

There is scarcely a condition of disease that presents a darker or sadder image than does this one. The subject, it is to be feared, has not received the attention in text-books and from teachers of obstetrics that its moment deserves. It is necessary to outline the course pursued by carcinoma of the uterus when complicated by pregnancy, in order to form a clear conception of our duty to these cases in the future. The statistics presented show that we cannot afford to wait for emergen-

cies, abortion, septic infection to arise, if we expect to reduce the fearful mortality.

If obstetricians and gynecologists were called upon to state their individual preference for treatment of these cases in two words, it is probable that the larger number would select vaginal hysterectomy, rather than high amputation, total extirpation, or partial excision. Unless exceptional circumstances are present, total extirpation, in operable cases, should be the rule; the operation to be performed at the earliest moment.

So far as treatment goes, carcinoma of the cervix uteri, associated with pregnancy, may be classified in three groups: First, cases in which the disease is confined to the uterine tissue, without infiltration of the vagina, bladder, rectum, or broad ligaments, and the uterus has not reached a size incompatible with vaginal hysterectomy, say up to end of the fourth month of pregnancy; second, cases presenting the features of the first class, except that removal of the uterus by vaginal hysterectomy is precluded, because of the late period of gestation, after the beginning of the fifth month; third, cases at any period of gestation when total extirpation is impracticable.

In the management of the first class, abortion, either accidental or induced, has been shown to be surrounded by many dangers, although it has been successfully employed by a few operators, as a preliminary to vaginal hysterectomy.

In the majority of these cases, high amputation of the cervix brings about abortion, and is even less successful as to final cure than when practised upon the non-puerperal uterus.

Dr. Vander Veer reported the case of a housewife, twenty-seven years old; good family history. She had menstruated at thirteen; had married at fifteen; had three children, aged respectively ten, seven, and five years, with one miscarriage between the second and third children. For a year menstruation had been more profuse and more frequent than previously. The family physician diagnosticated carcinoma of the cervix, an opinion that was concurred in after careful examination. There was also a possibility of the existence of pregnancy. The latter condition was by the patient thought impossible, as none of the usual symptoms of pregnancy had been present. A cauliflower-like excrescence was found protruding very uniformly from the anterior two-thirds of cervix. The growth was not particularly sensitive to the touch, but had a hard, indurated base. The body of the uterus was enlarged to the size of a small orange; the pelvis was apparently healthy; there was no infiltration of the vaginal walls.

Vaginal hysterectomy was performed September 30, 1890. The uterus was found somewhat larger than it was mapped out to be in the previous bimanual examination. The specimen, after removal, showed the cervix to have been completely involved in the growth, the body of the uterus containing a fetus of about two and a half months' development. Microscopic examination of the specimen disclosed a cellular infiltration resembling closely that of scirrhus of the breast. The patient returned to an excellent state of health.

The points of interest in the case are as follows:

There had been irregular menstruation for over a year—hemorrhage, as it were—yet when the disease must have been pretty well advanced, the woman became pregnant. Would this fetus have gone on to full time; could it have been delivered by abdominal section; and what would have been the mother's chances for recovery? The same line of treatment would be applicable to other patients similarly situated, Including this one, there have been sixteen cases of vaginal hysterectomy for carcinoma of the uterus complicated by pregnancy that had advanced not quite to the end of the fourth month, in which the mortality was *nil*.

Briefly the treatment of carcinoma of the uterus may be summarized as follows: In all operable cases, if the pregnancy is not advanced beyond the fourth month, vaginal hysterectomy should be performed at once; in all operable cases between the fourth month and term, as a rule, complete extirpation of the uterus by Freund's method, as modified by Zweifel, should be practised; and in inoperable cases, delivery at term, or supra-vaginal hysterectomy of the pregnant uterus—Porro's operation—should be attempted.

DR. E. P. DAVIS expressed the opinion that in case of Cæsarean section performed for carcinoma, the prognosis for the fetus at from the twenty-sixth to the twenty-eighth week can be rendered favorable by the use of incubation and gavage. If the fetus is at term, the simple Cæsarean section gives better results than the Porro operation. Sepsis may be avoided by packing the cervix and vagina with iodoform-gauze.

DR. ROBERT T. MORRIS, of New York, presented "A Report of Experiments Germane to the Subject of Abdominal Supporters after Laparotomy," recording observations made at various dates after the performance of laparotomy on rabbits, and concludes that the separate structures in an abdominal wound must be sutured separately in order to obtain a well-repaired wound. He found that at the expiration of seven days the peritoneum was so well united as to be as strong as normal peritoneum. The muscular and fibrous structures were practically of normal strength at the expiration of fourteen days, and the skin required four days more for completely firm union.

It is unnecessary to apply abdominal supporters for the purpose of preventing hernia after a patient is up and about, if the surgeon has united the separate structures properly. Dr. Morris stated that he had never had hernia appear after laparotomy in any of his patients, and they did not wear abdominal supporters after they were out of bed, excepting in occasional cases for purposes of comfort. He uses nothing but catgut for sutures and ligatures.

DR. CURRIER stated that he sutures the fascia separately in closing the abdominal wound. He cuts through the rectus muscle, and not through the linea alba. He uses a broad strip of rubber plaster instead of a supporter.

DR. MCKELWAY stated that he found supporters useful in cases in which union was not perfect.

DR. EDWARD W. JENKS, of Detroit, read a paper on "Colpo-perineorrhaphy." In operating he dissects a flap of vaginal tissue up as far as redundancy is observed on the posterior vaginal wall, using sharp-pointed, double-edged scissors. The stitches are introduced one-third of an inch apart; the flap rarely needs trimming; the last stitch purses the flap and completes closure. Dr. Jenks uses silver wire or silkworm-gut, and flat, non-

cutting needles. The flap is lifted, and the needles are brought out in the middle and re-inserted. For hemorrhage silk sutures are passed over the flap. No dressing is required, and few bichloride douches. The external parts are kept clean by means of bichloride solutions.

DR. POTTER stated that he prefers catgut and silkworm-gut.

DR. DOW objects to a purse-string suture, as rectocele is likely to result. He presses back the recto-vaginal septum and does not bury the sutures. He uses a plate and shot in front, and completes the approximation by a superficial catgut stitch.

DR. NEWMAN stated that he had found Tait's operation insufficient in many cases; but more satisfactory in complete laceration.

DR. W. H. MYERS, of Fort Wayne, Ind., read a paper entitled "A Few Considerations on Ovariotomy where Pregnancy is Present: with a Case." The case was that of a primigravida seized with abdominal pain, which obstinately resisted Christian science treatment. Examination revealed the existence of pregnancy complicated by the presence of an ovarian cyst. An operation was successfully performed, the cyst proving to be multilocular. Labor ensued a few days later, and was followed by brief fever. The patient made a good recovery.

DR. POTTER stated that he had performed double ovariotomy in the fourth month of pregnancy; the patient went to term and was delivered spontaneously.

DR. MURPHY related that he had operated successfully on a patient three months pregnant.

DR. E. P. DAVIS expressed the opinion that the drainage practised by Dr. Myers had been unnecessary, and that it is probable that the presence of the tube excited labor and the fever.

DR. MORRIS reported several successful cases of the same kind.

DR. DOW exhibited a double tenaculum for operating on the cervix.

DR. I. S. STONE, of Washington, D. C., presented a paper entitled "My Operative Experience in 'Pus Cases,'" giving the results of observations in a series of twenty-five cases occurring in his service at the Columbia Hospital for Women. Of these, three had died. One died of nephritis (following gonorrhea) that had begun a number of days before the section, and carried off the patient five days afterward. There was no peritonitis, the patient dying of uremia less than five weeks after the first evidence of vaginitis. The second case died of shock, twenty-four hours after section, from inadequate measures for its prevention. The third had serious bowel-injury, without rupture however, but which may have infected the peritoneum. There was some peritonitis, but no fluid in the cavity. The patient died in three days of exhaustion, with distention and obstruction of the bowels. About two-thirds of the cases followed abortion or delivery at term. Septicemia developing four, five, and in some cases even eight months after delivery had given rise to the most serious complications. Intestinal adhesions of longest standing involve great risk to the bowel in their separation. Gonorrhea had caused six large collections of pus, in some cases aggregating more than a pint. These abscesses, it was thought, were of many months' standing, and consent for operation was only given when the patient was *in extremis*.

On motion, a vote of thanks was tendered to the Chairman of the Section, Dr. E. E. Montgomery, for his efficient conduct of the meetings.

The following is the list of officers for the ensuing year:

Chairman.—Dr. John Milton Duff, of Pittsburg, Pa.

Secretary.—Dr. M. B. Ward, of Topeka, Kan.

Executive Committee.—Dr. E. E. Montgomery, of Philadelphia, three years; Dr. Joseph Taber Johnson, of Washington, D. C., two years; Dr. Joseph H. Eastman, of Indianapolis, Ind., one year.

NEWS ITEMS.

The Clinical College of Medicine and Specialty Hospital, of Chicago, has been organized to "supply to students the instruction and facilities for clinical work now obtained only by hospital internes and attendance at post-graduate schools." A suitable lot has been secured, and work upon the buildings is to be begun immediately. The course of study will cover thirty-six months of actual attendance at the College, Dispensary, and Hospital, divided into twelve terms of three months each. The classes attending each term will be limited to six students, and their entire time in the college and hospital will be occupied by practical work and personal instruction in the laboratories, in the clinical rooms of the dispensary, and in the hospital. No didactic lectures will be given. Advanced students will be required to assist in operations and nurse patients in the hospital, so as to thoroughly familiarize themselves with the after-treatment in surgical cases and the various phases of disease to be seen in the medical wards.

The requirements for admission to this college will be of the highest grade. The student must either have received a literary or scientific degree, or pass a thorough examination. Candidates for graduation will be required to present a thesis on original work in some department of medicine or surgery. During the last two terms of the college course every facility will be offered to students in the different laboratories for original research.

Instruction will be given in the following branches (each department to be conducted by a professor, aided by a corps of assistants): Eye and ear; nose and throat; dental and oral surgery; orthopedic surgery; surgical injuries, including fractures; surgery of the head, neck, and thorax; abdominal surgery; rectal surgery; genito-urinary surgery; surgery of the joints, including dislocations; gynecology; physical diagnosis, diseases of the chest and clinical medicine; nervous and mental diseases; diseases of children; dermatology; obstetrics.

The following departments will be taught by demonstrators who will give personal attention to classes of six in their laboratory, practical work, and recitations: Anatomy; physiology; chemistry and toxicology; materia medica and pharmacology; microscopy and histology; pathological histology; general pathology; surgical pathology; pathological anatomy; visceral anatomy; bacteriology; surgical appliances; surgical dressings and asepsis; hygiene and State medicine; medical jurisprudence; therapeutics; massage and

dynamo-therapy; electro-therapy and hydro-therapy; urinalysis; calisthenics.

The Directors are now receiving applications from candidates for professorships and demonstratorships. Further information can be obtained by addressing the Secretary of the Board of Directors, S. A. McWilliams, M.D., 3456 Michigan Avenue, Chicago, Ill., or the President, J. E. Harper, M.D., 1101 Masonic Temple, Chicago, Ill.

The American Climatological Association will hold its ninth annual meeting at Richfield Springs, N. Y., June 23, 24, and 25, 1892. The following papers have been secured:

Address of Welcome, Dr. C. E. Ransome, of Richfield Springs.

Address of the President: "The Element of Change *per se* in the Climatic Treatment of Diseases," by Dr. Willis E. Ford, of Utica.

"The Shurly-Gibbes Treatment of Tuberculosis," by Dr. E. Fletcher Ingals, of Chicago.

"Slow Breathing in Phthisis," by Dr. Carl Ruedi, of Denver.

"Treatment of Phthisis by the Pneumatic Cabinet," by Dr. C. E. Quimby, of New York.

"A Further Report on the Treatment of Phthisis in Colorado," by Dr. S. E. Solly, of Colorado Springs.

"Results of Tuberculin and its Modifications at the Adirondack Cottage Sanitarium," by Dr. E. L. Trudeau, of Saranac Lake.

"Experience with Guaiacol in Treatment of Tuberculosis," by Dr. A. Jacobi, of New York.

"The Use of Tuberculin; a Safe and Important Aid in Selected Cases," by Dr. Charles Denison, of Denver.

"The Hygiene of Bathing," by Dr. F. H. Bosworth, of New York.

"The Classification of Mineral Waters," by Dr. A. N. Bell, of Brooklyn.

"Heart Failure," by Dr. A. L. Loomis, of New York.

"Altitude in Affections of the Heart," by Dr. Frederick I. Knight, of Boston.

"Cardiac Disease Consequent on Epidemic Influenza," by Dr. R. G. Curtin, of Philadelphia.

"Effect of Change of Posture on Heart Murmurs," by Dr. V. Y. Bowditch, of Boston.

Discussion: "The Influence of Bacteriological Investigation on Preventive Medicine."

"Underground Water Currents; Causes and Results of Deflection," by Dr. Leroy J. Brooks, of Norwich, N. Y.

"The Causes of Death in Lobar Pneumonia," by Dr. G. R. Butler, of Brooklyn.

"The Methods of Cooling Water in Hot Climates," by Dr. T. J. Darlington, late of Bisbee, Arizona.

Papers are expected from Drs. James R. Leaming, Beverly Robinson, Clarence C. Rice, John M. Keating, James H. Wroth, and others.

The American Laryngological Association will hold its fourteenth Annual Congress at Boston, June 20, 21, and 22, 1892. The following program has been arranged:

First Day—June 20th.

President's Address, by Dr. S. W. Langmaid.

Papers: "The Present Status of the Treatment of Hay-fever," by Dr. C. E. Sajous. "The Influence of Certain Diathetic Conditions upon the Prognosis in Operations upon the Throat," by Dr. D. Bryson Delavan. "Some Pathological Conditions of the Upper Air-passages Accompanying 'La Grippe' Attacks," by Dr. S. Hartwell Chapman. "Pharyngo-mycosis," by Dr. F. I. Knight. "A Case of Carcinoma at the Base of the Tongue," by Dr. Jonathan Wright. "A Case of Cancer of the Tonsil Treated by Lactic Acid," by Dr. E. Fletcher Ingals. "Report of Some Cases of Membranous Sore-throat," by Dr. Beverley Robinson.

Second Day—June 21st.

"Intubation for Chronic Subchordal Stenosis of the Larynx in a Boy Twelve Years of Age," by Dr. Charles H. Knight. "Rare Forms of Laryngeal Growth," by Dr. Alexander W. MacCoy. "A Case of Tumor of the Larynx," by Dr. H. L. Swain. "Two Cases of Laryngectomy for Malignant Disease," by Dr. J. Solis-Cohen. "The Value of Sprays in the Treatment of Catarrhal Affections of the Upper Air-passages," by Dr. Clarence C. Rice.

Third Day—June 22d.

"Nasal Hydrorrhea," by Dr. C. E. Bean. "An Eligible Method of Repairing a Broken Nose," by Dr. W. H. Daly. "The Correction of Deformity Resulting from Abscess of the Nasal Septum," by Dr. John O. Roe. "The After-results of Nasal Cauterization," by Dr. T. A. DeBlois. "Diseases Incident to the Frontal Sinus," by Dr. D. N. Rankin. "A Case of Suppurating Ethmoiditis," by Dr. J. H. Bryan.

National Association of Railway Surgeons.—Dr. N. Senn, Chairman of the Special Committee on Program for the sixth annual meeting of the National Association of Railway Surgeons, reports the following as one of the topics for consideration: "Injury to the Spinal Cord and its Envelopes Without Fracture of the Spine. 1. History. 2. Experimental Research. 3. Anatomical Landmarks. 4. Spinal Localization. 5. Diagnosis from the Standpoint of the Neurologist. 6. Pathology and Pathological Anatomy. 7. Prognosis. 8. Treatment. 9. Medico-legal Aspects. 10. Statistics of the Amount of Money Paid by the Railroads of the United States during the last Ten Years for Alleged Injuries of the Spine."

Each of these sub-heads is to be considered in a thirty-minute paper, after which the subject will be open to discussion by the entire Association.

Dr. Henry F. Formad, Demonstrator of Pathology and Lecturer on Morbid Anatomy at the University of Pennsylvania, and Pathologist to the Philadelphia Hospital, died June 5, 1892, after a brief illness, at the age of forty-five years. The funeral took place on June 9th.

CORRECTION.

In the tenth and eleventh lines of the second column on page 673 of THE MEDICAL NEWS of June 11, 1892, Dr. Charles Denison is quoted as saying that "in a letter received, Dr. Edes expressed his great faith in the remedy." The name of Dr. Edes was, by mistake, used for that of Professor Koch, of Berlin.

At the top of the second column of page 504 of THE MEDICAL NEWS of April 30, 1892, it is stated that "the price of diuretin (Knoll) is $2.50 per ounce, av." We are informed that since January the price of diuretin (Knoll) has been $1.75 per ounce.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE TREATMENT OF SUPPURATION OF THE KNEE-JOINT, WITH ILLUSTRATIVE CASES.[1]

BY W. T. DODGE, M.D.,

SURGEON TO MERCY HOSPITAL, BIG RAPIDS, MICH.

THIS article is limited to the consideration of the prevention and treatment of suppurative synovitis, and will not include the discussion of epiphyseal osteitis or tuberculous synovitis. The subject of knee-joint diseases, especially the treatment of suppuration, and the prevention of that occurrence after injuries to the joint, is an interesting one to every practitioner, and one that should be thoroughly understood by everybody who practises the healing art. I have no doubt that everyone who has had experience in surgery is sufficiently familiar with the principles of the modern treatment of this affection, but I know that a great many general practitioners, who are thoroughly qualified for the general practice of medicine, make very serious mistakes when suddenly called upon to treat a recent injury of the knee-joint; and many of them are wholly at sea when confronted with a joint full of pus.

I have prepared this paper with the hope of provoking a discussion of this subject that will attract the attention of the general practitioners, who do not see many surgical cases, but who are generally first called to attend instances of simple wounds of the knee, and who may generally prevent the occurrence of suppuration in such cases, if they but apply the principles of aseptic surgery and enjoin absolute rest. As the knee-joint is the largest and most exposed joint in the body, it is very frequently injured, and unless wounds penetrating it are promptly and correctly treated, suppuration is sure to ensue. An incised wound of the joint should be thoroughly cleansed, and closed at once by means of deep catgut sutures. Aseptic dressings should then be applied, and the joint placed at absolute rest for several days. Punctured wounds should be enlarged, thus converting them into incised ones, when they may be treated as such.

CASE I.—Mr. C. L. was admitted into the Mercy Hospital on February 14, 1891, with a cut at the outer and lower angle of the right knee, penetrating the capsule, from which the synovial fluid was freely flowing. The injury had been received on the previous day, and the man had walked considerably subsequently. The joint was much swollen, and he was suffering from a great deal of pain. I washed the wound thoroughly with bichloride solution, and then closed it with deep catgut sutures. The usual bichloride gauze dressing was applied, the joint immobilized by means of a posterior splint, and the patient placed in bed. In three days the wound was found to be healed, and in a week the patient was discharged as cured.

CASE II.—Mr. J., a driver of a delivery wagon, on February 1, 1892, fell on a nail, which penetrated the knee-joint at the outer and lower angle of the patella. He removed the nail, and continued working until the following day, when the great pain and swelling brought him to my office for relief. I introduced a director into the opening made by the nail, and found it to pass directly into the joint. I enlarged the opening freely, and then treated it according to the method described in Case I. The patient had no further pain, and resumed work in one week.

The principles of the treatment of suppurative synovitis are drainage, irrigation, and rest.

The best description of the principles involved in establishing drainage of the knee-joint that I have been able to find is in the *Reference Handbook of the Medical Sciences*, from which I quote: "If the leg be extended and the muscles of the thigh be relaxed, all portions of the joint-cavity are then quite freely communicable with each other. . . . As soon, however, as flexion of the leg is begun, the patella is brought in contact with the articular surface of the femur, and the greater the degree of flexion the firmer will be the apposition of their articular surfaces; so that, when the limb is flexed at a right angle the joint-cavity will be practically, although not completely, divided into two cavities, one behind and below the patella, the other above it. With the limb in this position it is not possible to thoroughly wash out either cavity by way of the other.

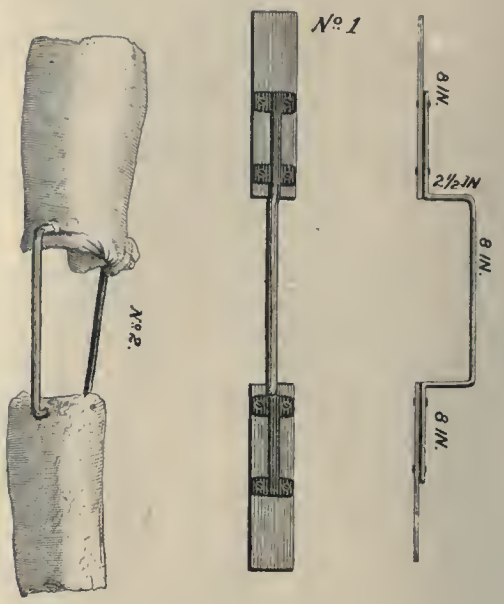
"When the limb is extended the upper synovial prolongation of the joint extends often four or five inches above the patella, beneath the tendons of the quadriceps extensor, and connects with the main joint-cavity by a free opening, which at times is much constricted. As the leg is flexed this pouch is continually drawn down, until, with the limb fully flexed it is located at the upward limit of the

[1] Read before the Michigan State Medical Society, May 5, 1892.

articular cartilage at the lower end of the femur; therefore, when this pouch is to be opened at its uppermost limit the leg must be fully extended. At the posterior aspect of the joint-cavity each condyle of the femur rests in a cup-shaped depression of the ligamentous tissues, and each one should be drained independently. The synovial membrane also surrounds the upper end of the tibia and the lower portions of the outer surfaces of the condyles of the femur, and in the recesses thus formed, unless unusual care be taken, inflammatory products may collect and decompose.

"In order to prepare for the thorough washing out and drainage of the knee-joint, the leg must be fully extended, and through an incision made at one side of the patella the index-finger of the operator should be introduced into the joint-cavity, and pushed upward beneath the patella into the mouth of the submuscular prolongation of the synovial membrane, the neck of which is stretched or divided if it be too narrow to admit the ready entrance of the finger, which is carried beneath the vasti muscles to the uppermost limits of the sac; and at these points the drainage-tubes are carried through to the antero-lateral surfaces of the thigh. The cavity above the patella should be additionally drained by tubes passed into it at either side of the tendon of the quadriceps extensor, close to the upper end of the patella. The remaining part of the cavity is drained through its anterior and posterior portions. The anterior openings are made beneath the ligamentum patellæ, at the apex of that bone. The posterior drainage-tubes are passed between the hamstring tendons and the bones in front, into the posterior condyloid pockets before mentioned."

Irrigation should be thoroughly carried out every day with some antiseptic solution. My preference is for a solution of mercuric chloride of 1 : 2000, but any antiseptic solution will answer. Hydrogen dioxide is a very valuable cleansing agent in this as in all other pus-cavities, and by its use the joint can be rendered free from pus. Rest is procured by some form of apparatus that immobilizes the joint in a straight position and affords opportunity for inspection and treatment. Any one of the several varieties of bracket splints described in the text-books will fulfil these indications very well; but the most simple and inexpensive one that has come under my observation has never heretofore, to my knowledge, been described in print, and was devised by my friend, Dr. H. M. Leach, of Saginaw. The accompanying illustrations give a clear idea of the splints and their method of application to the leg by means of plaster-of-Paris. They can be made in a short time by any blacksmith. They are also very useful in the treatment of compound fractures of the leg. If the fracture is near the ankle, the splints are bent at one end at a right angle and attached to the sides of the foot. It will be seen that when they are in place the limb can be handled, irrigated, and



the dressing applied without causing pain to the patient.

The following cases illustrate the results of the foregoing method of treatment:

CASE III.—A. R., male, aged fourteen years, was admitted into the Mercy Hospital on November 28, 1890. Several weeks previously he had received an injury to his left heel, which resulted in suppuration. I found a bladder of pus hanging from his heel, and learned that he was having rigors and a fever of 105° F. The pus was evacuated and the abscess irrigated, but the rigors continued, and suppuration of the right knee occurred. Two days after his admission, with the assistance of Dr. Burkart, I removed the entire left os calcis, it being completely destroyed by the suppuration, and made free openings into the right knee-joint, irrigated it thoroughly with bichloride solution of 1 : 2000, introduced eight drainage-tubes, and put the leg up in bracket splints. In introducing the drainage-tubes I explored with my finger, and placed the end of a tube in every pocket in which there was any possibility of pus accumulating. The patient had no further rigors, and the temperature came down to 100° F., where it remained several weeks, and then gradually approached the normal. Daily irrigation with a 1 : 2000 bichloride solution was practised, and at the end of three weeks the patient was removed to his home, where the treatment was continued by the family physician, who recently reported to me that both the knee and the ankle had healed perfectly, and that the boy had good use of both limbs, with considerable motion in the diseased knee.

CASE IV.—I saw this patient in January, 1891, in

consultation with Dr. John Snyder, of Mecosta, who has kindly furnished me with the following history of the case. When I saw the patient his physician had established perfect drainage, and I did nothing but approve of his treatment and recommend the application of bracket splints. "Mr. W. H., while chopping, cut into the left knee-joint, just missing the upper outer angle of the patella. He remained in the camp eight days, during which time nearly everything was applied to the wound, including cow manure. He continued getting worse until the ninth day, when he came home and consulted me. He had a temperature of 105° F., with all the terrible depression following a septic inflammation in the knee. The odor of the discharge from the wound was simply indescribable. He had severe pain, especially upon the slightest motion. I made free openings into the joint, introduced three large drainage-tubes, and irrigated with a 1 : 2000 bichloride solution. After this procedure his temperature fell to 101½°, and remained so for three days, when three more drainage-tubes were introduced and the limb put up in bracket splints. The joint was then perfectly drained, and his temperature fell to 99° F., at which point it remained for eight days, when it became normal. The joint was irrigated every other day with the 1 : 2000 bichloride solution. In four weeks the knee was perfectly healed. He can now (March, 1892) walk without a limp, and can bend the joint at an angle of forty-five degrees."

Dr. Snyder deserves much credit for his successful treatment of this serious case, as the difficulties attending the treatment of such a case in a private house many miles in the country are much greater than in a hospital.

CASE V.—H. L., a boy, aged twelve years, on September 1, 1891, received a cut on the left knee with an axe, and was taken immediately to his local physician, who is generally respected as a competent physician, but who has had no experience in surgery. The doctor sewed up the wound without making any special attempt to procure asepsis, and sent the lad home without giving any instructions whatever concerning his future care. The boy continued to move around as usual for several days, when the joint became so much swollen that he was forced to remain quiet. One week after the injury he was admitted into the Mercy Hospital, when I found the joint filled with pus, and the patient suffering from pain, rigors, and a fever of 103°. With Dr. Burkart's assistance, I opened the joint, irrigated, introduced drainage-tubes, and put the leg in bracket splints, as previously described. The improvement was immediate and continuous, and the boy was discharged in six weeks, cured. I examined him in March last, and found him in good health, with a useful leg, the knee-joint being freely movable.

Theodore Meynert, the distinguished alienist and neurologist, died recently at Vienna, at the age of fifty-nine years.

THE VERTIGO OF ARTERIO-SCLEROSIS.[1]

BY ARCHIBALD CHURCH, M.D.,
PROFESSOR OF NEUROLOGY, CHICAGO POLYCLINIC; LECTURER ON INSANITY, ETC., CHICAGO MEDICAL COLLEGE.

THE discussion of a pathologically subjective state is in itself practically impossible, and the difficulty is not lessened when that state is a symptom of many widely-differing conditions, some functional and some grossly organic. To use the term vertigo is therefore undesirable, but for lack of one more definite its employment is a necessity, and in this connection is not open, perhaps, to the emphatic objection that elsewhere obtains. It is in its generic sense that I wish to make use of it.

In a very recent and comprehensive article, Suckling[2] takes up the subject of vertigo, and in a way describes it as the consciousness of disordered equilibration, showing that it may exist from want of harmony in the impressions received from any of the senses, and possibly from the sensibility of the viscera as well; but it is not my present purpose to direct attention to the physiology of equilibration, or to take up the interesting topic of coördination, which is closely associated therewith. Suckling, clinically, classifies the forms of vertigo as aural, ocular, vascular, dyspeptic, nervous, epileptic, toxic, of organic brain-disease, and from reflex irritation, but says nothing specifically of the vertigo of arterio-sclerosis. Most other writers, either on the topic of vertigo or on that of arterio-sclerosis, are equally silent; yet vertigo may be, and often is, as will be urged farther on, a signal symptom of this arterial state, the proper recognition of which may lead to such treatment as will obviate organic disease of the brain, kidneys, liver, and other important structures, and many times definitively prolong life.

It is only of late years that arterial changes have been given the importance in pathology and in clinical medicine that they deserve. The degeneration of senility, the modifications found in gout, rheumatism, chronic metallic poisoning, syphilis, and those associated with alcoholism, chronic nephritis, and many other serious maladies, make it imperative that we recognize at the earliest moment the presence of a change in the artery that may in many instances, in the early stage, be amenable to treatment, but which otherwise soon passes beyond the possibility of medical control. Atheroma is not here synonymous by any means. It is the pre-atheromatous condition with which we have to deal, and it is the vertigo symptomatic of that arterial fibrosis to which attention is directed. As a matter of demonstrable fact, this arterial state is widely and generally disseminated in these cases, but the com-

[1] Read in the Section of Medicine of the American Medical Association, at Detroit, June 7, 8, 9, 10, 1892.

[2] Birmingham Med. Rev., Nov. 1891.

plexion of the disease varies with its local intensity. In some instances a contracted kidney, in others angina pectoris, in others the cerebral symptoms are the prominent feature, and of the brain-symptoms the earliest is vertigo, and the last cerebral hemorrhage or dementia.

When a man, past the prime of life, without any previous serious illness, becomes suddenly faint, has a swimming in the head, a feeling of giddiness, of distinct gyration, of darkness and impending death —one or several of these sensations—he usually at once seeks advice in grave apprehension (sometimes well founded) of approaching cerebral hemorrhage, and usually gets a cholagogue cathartic, or is told that his stomach is wrong, and sometimes is told rightly. But cases are constantly presenting themselves in which such vertiginous attacks are happening at shortening intervals; the patient gives up his tobacco, his spirits, if he is a drinker, cuts down his meat, takes to some of the many waters recommended, has Turkish baths, and gains only moderate relief, or none at all. If he is carefully examined, he will probably present a well-defined tortuous frontal artery, a distinct arcus senilis, a strong, even a clanging, second sound of the heart, sometimes reduplicated, and yield a sphygmogram indicative of increased arterial tension. The pulse may be abnormally slow or arhythmic, the urine scant, and a trace of albumin is not rare. He finds that exertion of a moderate degree precipitates the attack, that he cannot endure a temperature at all above the usual, and often a change of position from recumbency to the upright is the occasion of a "blur" or of giddiness.

The attack itself is, as already indicated, widely variable in different patients. A fulness and throbbing in the head, a feeling of heat in the scalp, and a blur before the eyes are usually mentioned, and at such times marked paleness is noticed, followed, as a rule, by considerable redness of the face. There is a desire to get in the open air, and badly-ventilated or close apartments are unendurable. An habitual smoker will sometimes find tobacco-smoke repugnant. In more severe forms, the patient may stagger, fall, or gradually sink to the ground; he cannot speak for a few seconds, though consciousness is rarely completely lost. The recumbent position is usually sought, or the patient clings to some object, and after a period of from five to twenty minutes the feeling passes away, leaving him rather languid, with an inclination to sleep, and usually mentally depressed and apprehensive. At first, he attributes the attack to anything and everything that in his estimation can cause a departure from health, and usually establishes a close watch upon his diet, habits, and mode of life; is inclined to avoid exercise or exertion of any sort, fearing to precipitate an attack, or to go by himself on the streets—in short, becomes an invalid with hypochondriacal tendencies.

In a remarkable monograph on this subject, Professor J. Grasset,[1] of Montpellier, divides the vertigo of arterio-sclerosis into three forms: (1) Simple vertigo; (2) Vertigo with epileptiform crises; (3) Vertigo with slow pulse and syncopal or epileptiform attacks. Some of the features of the slighter attacks, as already roughly sketched, undoubtedly suggest a similarity to mild epileptic seizures—for instance, the paleness of the face, the oppression and the final confusion, depression and tendency to sleep—but personally I have never encountered well-marked convulsive phenomena reasonably attributable to this cause.

With Huchard,[2] Grasset is in some cases inclined to attribute acquired habitual extreme slowness of the pulse, which, in numerous reported instances, has ranged from twenty to forty per minute, or even less, to the effect upon the medulla of an arterio-sclerosis acting mechanically to lessen the blood-supply to the cardiac centers. As far as I have been able to ascertain, this hypothesis has, as yet, received no positive anatomic or experimental support, though it is seductively reasonable. The bradycardia is almost always marked by syncopal and vertiginous features, and arises in individuals predisposed to or actually the subject of marked arterio-fibrosis.

The diagnosis is often one of extreme difficulty, in spite of a hasty statement to the contrary by a recent American writer. I have known the symptomatic vertigo confused with Ménière's disease by a very competent specialist in nervous diseases; for it may, as in that particular instance, be of a systematized character—that is to say, marked by a sensation of falling in a given direction, or of being rotated in a constant manner to the right or left, and even associated with a suggestive stagger. If to this a little middle-ear catarrh is added, a diagnosis of aural vertigo might be easily reached, but a closer and somewhat wider examination will detect the integrity of the auditory nerve and the presence of the arterial fibrosis, with the underlying predisposition of alcoholic excess, syphilis, gout, rheumatism, chronic lead-poisoning, or other constitutional state of etiologic significance.

In the treatment, the basic element is the object of attack; and whatever this may be, potassium iodide will find an indication in the arterial change, which if recognized in its incipiency can practically be controlled, providing the patient is manageable. It is the sheet-anchor, and from its exhibition in moderate doses of from thirty to ninety grains a

[1] Du Vertige Cardio-vasculaire, Paris, 1890.
[2] Traité des Maladies du Cœur et des Vaisseaux.

day for a number of months, much benefit and often a substantial cure can be expected.

I am led to emphasize the importance of this vertigo becaue it is a very early symptom of a condition that, neglected, leads to distressing and even fatal results, and which unrecognized is the source of endless anxiety and misery to the patient and of chagrin and disappointment to his medical attendant. If it were desirable, numerous case-records could be cited, but it is hoped that attention once having been called to a proper interpretation of the symptom it may be less frequently mistaken, and I would urge that the condition of the arteries and the heart be made an object of early and thorough investigation in every instance in which obscure vertiginous attacks, or a persistent giddiness, is present.

THE FUNCTION OF THE LACHRYMAL PUNCTA.

BY GEORGE M. GOULD, A.M., M.D.,
OPHTHALMOLOGIST TO THE PHILADELPHIA HOSPITAL.

IN no book on physiology or on the eye have I seen any attempt at an explanation of the function of the puncta; nor have I ever been able to learn from the many ophthalmologists I have questioned that the thought of attributing to them any function whatever had occurred to them. The very name, punctum, shows ignorance of its function, since, far more than a black dot or point, it is a sphincter-guarded mouth, a lachrymos, if a word might be coined. The routine practice of ophthalmic surgeons, of "slitting up the canaliculus," in cases of epiphora and dacryocystitis, confirms the general thoughtlessness as to the utility of the punctum.

Nothing, however, is more certain than that no physical organ comes into existence except in obedience to a stringent necessity; nor does it continue in active function except it subserve a useful end. It should not therefore be destroyed except from imperative necessity. I have elsewhere[1] noted the reckless and stupid haste with which the function of the punctum is forever destroyed by the customary treatment of epiphora, lachrymal conjunctivitis, dacryocystitis, etc.

It has been long known that the punctum is surrounded by a series of muscular fibers that have precisely the action of a sphincter. This may be demonstrated by inserting a bristle or fine probe into the orifice, when the force with which the foreign body is grasped may be distinctly felt. Dust-particles pass *below* the punctum, their gravity aiding to keep them away from the opening of the punctum. The lower punctum being at the very upper border, drains off only the upper and purer part of the little lake of tears, the action of the lids and of the excess of tears washing the foreign bodies easily past the punctum to the inner canthus.

In eyes that are inflamed, the concrete exudate, both in waking and after sleep, is gathered at the inner canthus, having passed by the punctum. The same fact is observed when black dust in the eyes has been excreted by the action of tears and the lids: it is found gathered in a little ball at the extreme inner angle of the lids. By its exquisite mechanism the eye has most dextrously rid itself of the rubbish; and in doing so this has not been dumped into the capillary tubes of the canaliculus or duct. Had this, through a large patulous opening, taken place, the foreign bodies, however tiny, either mechanically by gathering and thus clogging the tiny canal, or by the reaction of the resultant irritation or inflammation, would often have closed the excretory passage-way, producing the well-known symptoms of lachrymal retention, etc.

It would therefore appear that the sensitive sphincter and punctum constitute a willing gateway for the excretion of pure tears, but a careful guard or sifter-out of dust, irritating particles, and such viscid products of inflammation as would in any way produce stenosis of the connecting drainage-system lying beyond and below. The fact would argue for the theory I have advocated[1] as regards the non-action of antiseptics upon the gonococcus in the canaliculus, sac, etc. Not only is pus a foreign body, but probably the irritation of the brush employed in making applications, etc., acts as an excitant to punctum-contraction. It would also and especially emphasize the value of other methods than those of entire destruction of the sphincter punctum, in the treatment of functional or temporary lachrymal obstruction. In these days, morever, of manufacturing and urban life, with an atmosphere increasingly thick with dust, it behooves us to pay particular attention to the preservation of a structure and function so beautifully purposive and so effectively useful to the eye.

[1] "A Simple Method of Treating Many Cases of Lachrymal Obstruction," N. Y. Med. Journ., June 4, 1892.

CLINICAL MEMORANDUM.

A CASE OF HEREDITARY SYPHILIS.

BY S. M. HASLEA, M.D.,
OF ALBUQUERQUE, N. M.

FOUR years ago Mr. D., a lawyer, died in an Eastern asylum from tertiary syphilis, cerebral symptoms having been especially prominent. For several years previously to his death he had presented symptoms of insanity. Twenty-one years ago he married, his wife, then a young woman, being in the bloom of youth and in full health. At the time of his marriage the man was suf-

[1] "A Method of Infection, Treatment, and Prophylaxis of Purulent Ophthalmia," THE MEDICAL NEWS, June 11, 1892.

fering from what I suppose was the primary stage of secondary syphilis. Soon afterward his wife conceived and aborted at three months, having acquired syphilis from the fetus infected by the father. Later, another child (girl) was born at full term. This child, at the age of twelve years, showed marked symptoms of secondary syphilis, growing worse until the age of fourteen. Five years ago she came under my professional care for general treatment, but at the expiration of six months circumstances caused her to be lost to observation. Two years afterward—that is, three years ago—she returned, perfectly blind in both eyes. Only light-perception remained. Both eyes appeared perfectly opaque, of a milky whiteness. After two years of constant constitutional treatment with mercuric iodide in tonic doses, one-sixth of a grain, with hot-water baths three times a week, she seemed to recover fully from all manifestations of disease; the eyes cleared up perfectly. The girl then passed from under my professional care, apparently healthy in every respect, with not a vestige of syphilitic trouble. At the outset, believing the eye-trouble to have been caused by constitutional syphilis, nothing was done for the eyes in the way of local treatment.

MEDICAL PROGRESS.

The Saliva in Disease.—JAWEIN (*Wiener medizin. Presse*, 1892, Nos. 15 and 16) has made a study of the saliva in various conditions of disease. He found that the quantity is increased in slight febrile affections, while the fermentative activity remains unchanged, the absolute amount of ferment produced being diminished. In severe febrile affections the quantity of saliva is considerably diminished, but the amylolytic activity is increased. The diminution in quantity is greater than the increase in activity, so that there is an absolute diminution in activity. In more severe febrile affections, a minimum quantity of saliva is secreted, the amylolytic activity being likewise diminished, the reduction in both being in direct ratio to the severity of the disease. After a crisis, the quantity and the fermentative activity of the saliva fall below normal. In acute febrile diseases of protracted duration, the quantity of saliva is not rarely normal, the amylolytic activity, however, being subnormal. In even severe cases of pulmonary tuberculosis, neither the quantity of saliva nor its fermentative activity is diminished. A few days before death, the quantity undergoes change, the activity remaining unaltered. In chronic nephritis, the quantity of saliva is diminished, and its amylolytic activity is not rarely below normal, with an attendant diminution in production of ferment. In ascites, the production of ferment is greatly diminished; especially is the quantity of saliva diminished; while the fermentative activity undergoes but little change. In protracted, debilitating affections, such as scorbutus, diabetes, Addison's disease, the production of the salivary ferment is not uncommonly diminished.

The Clinical Examination of Breast-milk.—At the recent meeting of the American Pediatric Society, HOLT detailed a simple method of examining breast-milk for clinical purposes. There are two ingredients in milk that are nearly constant in their proportions: milk-sugar and the inorganic salts. Two others vary widely: fat and the proteids. From a knowledge of the specific gravity and the amount of fat, it thus becomes possible to form an approximate idea respecting the proteids. There was found to be in breast-milk a pretty constant relation between the amount of cream rising upon a given specimen in twenty-four hours and the amount of fat. The ratio was approximately two to one.

An apparatus was shown for taking the specific gravity of a small quantity of milk, and cylindrical tubes graduated in one hundred parts, from which the amount of cream could be read off at the end of twenty-four hours. The clinical significance of these data was shown by the following table, drawn from observations upon upward of three hundred specimens of breast-milk from eighty different women.

Attention was called to the fact that an estimate of the quantity must be made by other means. The specimen for examination should be taken from the middle of the nursing.

HUMAN MILK.

	Specific gravity 70° F.	Cream—24 hrs.	Proteids.
Normal average	1.031	8 per cent.	Normal.
Healthy variations	1.028–1.029	9 per ct. to 12 per ct.	Normal (rich milk).
" "	1.032–1.033	5 per ct. to 6 per ct.	Normal (fair milk).
Unhealthy "	Below 1.028	High (above 10 per ct.)	Normal or slightly below.
" "	" "	Normal (5 per ct. to 10 per ct.)	Low.
" "	" "	Low (below 5 per ct.)	Very low (very poor milk.)
" "	Above 1.033	High	Very high (very rich milk).
" "	" "	Normal	High.
" "	" "	Low	Normal (or nearly so).

The Origin and Seat of Epileptic Disturbance.—As the result of painstaking and long-continued observations and of ingenious deduction, HORSLEY (*British Medical Journal*, No. 1631, p. 693) concludes that, whatever the part first attacked by the epileptogenous agency, the principal seat of disturbance in a general or idiopathic fit is the cerebral hemispheres, and especially their cortical layer. The condition of the cortex during the paroxysm is one of congestion and not of anemia. In all probability the cerebral cortex is actually the point of origin of the disturbance.

Paralysis Agitans in a Young Man.—QUINTARD (*Bull. de la Soc. de Méd. d'Angers*) has reported the case of a youth, sixteen years old, who presented the symptoms of paralysis agitans. Two years previously, following exposure to cold, tremor appeared in the right hand and continued for a month; while within two months the tremor had reappeared, now extending to the arm and shoulder. Soon the characteristic movements also involved the lower extremity upon the same side.—*Journ. de Méd. et de Chir. Prat.*, 1892, lxiii, 5, p. 182.

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SATURDAY, JUNE 25, 1892.

OVARIAN GESTATION.

OVARIAN gestation is a term that is accepted without question. It is applied, however, to a condition that has but a shadowy basis of fact. In the *University Medical Magazine* of March, 1892, there appears an abstract entitled "Ovarian Pregnancy," made from the report of a case by MACKENRODT to the Obstetrical and Gynecological Society of Berlin. The specimen, consisting of tube and ovary, is described as follows: "The tube extends in the normal condition a distance of two and a half centimeters from the uterus, then swells abruptly to the diameter of two thumbs, and regains its normal thickness at the fimbriated extremity. The latter is lost in a tumor the size of a goose-egg. The ovarian tumor is composed of a cyst, the walls of which contain ovarian tissue. The cavity of this cyst is in communication with the lumen of the tube, and is lined by a smooth amniotic layer, and contains chorionic villi."

This is the characteristic description of an ovarian gestation-cyst, based upon the supposed preformed connection between the tube and ovary. For those who can accept the possibility of such a condition the fact of a direct communication between the tube and the cyst, the expanded fimbriæ lining the opening of communication, is enough to account for the impregnation of the ovule in the distended follicle, in which the cyst originates. This would be satisfactory if it could be proved that such a connection between the tube and a follicle exists. Such a plausible hypothesis, however, is not ventured by the more competent observers. WINCKEL, for instance, accounts for the existence of ovarian gestation by the penetration of the wall of the follicle (through a rent) by the spermatozoa, and the impregnation of the ovule within the cavity. An ovarian tumor is thus formed, in which the fetus is included and surrounded by ovarian tissue, the placenta becoming attached to the wall of the follicle, the membrana granulosa being transformed into the decidua, and the ovarian stroma taking the place of the uterine wall.

The most reasonable explanation of the condition, however, is that advanced by SUTTON, in his work on *Surgical Diseases of the Ovaries and Fallopian Tubes*. He does not admit the occurrence of true ovarian gestation, basing his arguments on the following facts:

In the guinea-pig, in the mare, and in the mouse, the ovary rests in a fold of the broad ligament that partly invests the organ. In these mammals this "ovarian sac" is deeper than in the human female; its existence, however, in a developed state in women is proved by the occurrence of ovarian hydrocele, specimens of which are preserved in various museums, one in St. Bartholomew's Hospital being depicted in the work referred to (page 120). The peculiarities of ovarian hydrocele may be summarized thus: "1. The Fallopian tube opens by its abdominal ostium into a sac on the posterior aspect of the broad ligament. 2. The tube is elongated, dilated, and tortuous; the general outline of the parts resembles a retort with a convoluted delivery-tube. 3. In small cysts the ovary will be found projecting on the floor of the sac. In larger specimens it will be incorporated with the wall of the sac, and in very large specimens is unrecognizable."

In the light of these facts we may conclude that in so-called ovarian gestation it is probable that the ostium of the tube opens into an ovarian sac that has become shut in by adhesions or in some other way, the condition being possibly due to a congenital malformation.

The ovule may be discharged into this cavity and become impregnated therein, the fetus developing in the cyst thus formed. SUTTON says, further: "For a long time I made many systematic observa-

tions of the mammals in which this sac is well developed, with the notion that an impregnated ovum might be found in it, for, as far as my investigations have extended into the subject, I am convinced that ovarian gestation has no existence, but that it may have been mistaken for gestation in an ovarian sac, which, of course, is a very different matter." The specimen described by MACKENRODT coincides with the conditions present in ectopic gestation in an ovarian sac, especially as the ovarian tissue found in the cyst wall was confined to a localized area.

INFORMATION WANTED AS TO KEELEYIZED PATIENTS.

WILL asylum-superintendents and physicians generally send to the editor of THE MEDICAL NEWS any exact information that they may have as to cases of relapse to drinking-habits, of insanity, suicide, death, etc., of patients that have passed through the so-called cure of the Keeley Institutes? Correspondents will please give the names of patients, and as exact data as possible. No public use will be made of individual names, either of patients or of physicians (without consent), but in order to render the statistics useful we ask for the most accurate information possible.

THE PITTSBURG MEDICAL REVIEW AND THE ASSOCIATION JOURNAL.

IN congratulating the members of the medical profession of the State of Pennsylvania upon their success in securing the passage of the resolution requiring the purification of the *Journal of the American Medical Association* from the nostrum stain, we are glad to mention the good work done by the *Pittsburg Medical Review*, which has been and is vigorous, earnest, and outspoken for the right.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-third Annual Session, held at Detroit, June 7, 8, 9, and 10, 1892.

(Continued from page 711.)

SECTION ON NEUROLOGY AND MEDICAL JURISPRUDENCE.

FIRST DAY—JUNE 7TH.

The Chairman, DR. HAROLD N. MOYER, of Chicago, made a few remarks concerning the origin and growth of the Section on Neurology and Medical Jurisprudence

MR. HENRY A. CHANEY, of Detroit, read a paper entitled "Responsibility in Will-making."

Reference was made to the earlier interpretations in common law, that inasmuch as mind is one and indivisible, no one faculty could be deranged without invalidating the mind as a whole. Later decisions were more and more lenient, and now there is less and less disposition to interfere with wills made in states of unsoundness. Cases of insanity were reported in which wills had been sustained, notwithstanding the existence of mental unsoundness; others in which they were not sustained. The necessity for more light in will-cases in which a belief in spiritualism is alleged as evidence of incapacity, was pointed out. A plea was made for the determination of some definite degree of dementia to mark the limit of testamentary capacity.

DR. C. G. COMEGYS, of Cincinnati, read a paper entitled "A Healthy Brain is Necessary to a Free Will." He emphasized the dependence of healthy mental action upon the existence of a healthy state of the brain; and the faculty of will, as the governing power, was given the place of preëminence in the mental life. A plea was made for mental hygiene as the means of overcoming many of the vicious tendencies of modern life.

DR. C. H. HUGHES, of St. Louis, followed with a paper entitled "Hysterical Concomitants of Organic Nervous Disease." He pointed out the early prominence of hysterical symptoms in many cases of organic nervous disease, and emphasized the necessity for a due consideration of this fact in diagnosis. Hysterical symptoms are not so much symptoms of the organic malady as signs of a neurosis, to awaken which into activity the organic disease sufficed.

DR. C. K. MILLS, of Philadelphia, then read a paper on "The Pantomimic Disorders of Aphasia," citing numerous cases to show that, along with speech-defects, there were often related defects of pantomime, and these defects were classified after the same manner as those of speech.

DR. C. G. CHADDOCK, of Traverse City, Mich., read a paper entitled "Retinal Excitation of Cortical Origin in Visual Hallucination," in which he attempted to show that the prevailing assumption of a severe "current" from center to periphery in hallucination is unnecessary; and that the element of objectivity in visual hallucination may be as rationally assumed to be afforded by indeterminate stimuli coming from periphery to center.

SECOND DAY—JUNE 8TH.

Morning Session.

DR. A. D. ROCKWELL, of New York, read a paper on "Executions by Electricity." He stated that while not altogether in favor of capital punishment, yet he was firmly of the opinion that if the law must destroy, it should do so decently. As one of the Commission appointed by the State of New York to determine the best method of procedure in carrying out the Act for electric executions, he had found that a strength of 1000 volts was the maximum of current required to instantly destroy any animal, large or small. The recent executions, however, demonstrated that a stronger current was required to extinguish life in a human being than in any domestic animal, however large.

He ascribed this fact to causes both physical and psychic. Because of the fright experienced by the criminal about to undergo the death-penalty, the blood leaves the periphery, thus causing the body to oppose a greatly increased resistance to the passage of the current. In the second place, the victim knows what is coming, and every nerve and muscle is tense with involuntary resistance. In animals these conditions do not prevail, and in accidental killings by electricity it had many times been demonstrated that instant devitalization had taken place by contact with electric potentials less than those employed in judicial executions. When a current of lethal energy (from 1500 to 2000 volts) is employed, it is mathematically impossible that pain should be experienced.

No one that has once witnessed a properly conducted execution by electricity will fail to commend it as a most humane method, as compared with hanging.

Aside from the fact that a human life is being taken, there is little in connection with the execution that is revolting to the senses. After the first convulsive movement, as the current is received, every muscle is simply tense and motionless until the current is broken, when relaxation takes place, and the victim is to all intents dead. The scorching and blistering, about which so much has been said, are superficial, and so slight as to be unworthy of comment.

Dr. Rockwell was of the opinion that a question that could and would be determined related to the possibility of making the current act exclusively on the centers of life and nervous activity, so that they would be instantly devitalized, and at the same time leave no outward manifestation of the terrific power employed.

DR. GEORGE E. FELL, of Buffalo, N. Y., presented a paper entitled "Electrodes and their Application in Electrocution." He stated that he was the first to make demonstrations upon the lower animals directly in connection with this subject. From his investigations he strongly endorses electrocution as the most humane, as the readiest, least troublesome, and least horrible method of inflicting the death-penalty, from the standpoint of suffering on the part of the criminal, and also from the effect upon the officers who must carry out the law. Dr. Fell objects to the application of the electrode to the feet, the thigh, or the forehead, for the reasons that the vital portions of the body are not so positively affected in those locations as they would be in others. In applications to the feet or to the thigh there is an undue amount of resistance obtained through the extent of tissue that the current must traverse. He thinks that for many reasons it were better to apply one electrode to the top of the head, so as more directly to influence the cerebrum and spinal cord, and one to the epigastric region, as close to the apex of the heart as possible, so that the full force of the current would be expended upon the nerve-centers in the brain, spinal cord, and upon the muscular tissue of the heart. His argument is based upon experiments made upon the lower animals, which prove conclusively that the nearer the electrode is placed to the heart, the more suddenly this organ ceases action. He claims that this location of the electrode could be more easily made than that to the thigh; that it would be more positive in result, and could be applied before the culprit left the cell—the connection with the dynamo wires and the saturating fountain syringes being easily and quickly made after the culprit sits in the chair.

Afternoon Session.

DR. W. H. HOWELL, of Ann Arbor, Mich., read a paper entitled "Nerve-regeneration After Suture," in which he gave an account of a research undertaken in connection with Dr. G. C. Huber, upon the general subject of nerve-degeneration and regeneration, which has been awarded the prize of the American Physiological Society. Four main points were taken up for investigation, namely, the possibility of immediate union in a severed nerve without degeneration of the distal extremity; the possibility of union with return of function between the central portion of any one spinal nerve and the distal portion of any other; the histologic changes in the distal extremity of the nerve during degeneration and regeneration; a tabulation and critical *résumé* of the surgical cases of primary and secondary sutures, with especial reference to the evidence from this source as to immediate union.

In the experiments dogs were used. The ulnar nerve was chosen for the operations, which were performed as aseptically as possible. In some cases the nerve was cut and sutured with catgut; in others it was crushed; and in others still it was coagulated over a narrow area by a stream of hot water. Some fifty-eight experiments were performed—the chief results of which are as follows:

However the continuity of the nerve was interrupted, whether by section, with subsequent suture, by crushing or by coagulation, immediate reunion without degeneration of the distal extremity could not be obtained in any case. In every instance the distal extremity underwent complete degeneration, which was studied histologically. When sufficient time was allowed, and the distal extremity remained in connection with the proximal extremity, regeneration ensued. The first return of function in the nerve operated upon (the ulnar, at the elbow) was detected at about the end of the third week (twenty-one days) after the operation. With reference to the possibility of the distal extremity of one nerve uniting with the central extremity of another, with return of function, the nerves operated upon were the ulnar and median. The operation was perfectly successful; after a certain interval, sufficiently long for the processes of degeneration and regeneration to have taken place, the distal piece when laid bare and stimulated directly was found to have recovered its irritability perfectly.

In all of the operations the nerves were preserved and studied histologically, both in sections and in teased preparations. The paper gave a complete description of the progressive changes of degeneration from the beginning of the segmentation of the myelin and axis up to their complete absorption. In regeneration, which starts early in the stage of degeneration, the nuclei of the sheath at first take the most prominent part; they proliferate, migrate, and eventually form a continuous band or fiber of homogeneous protoplasmic material, the "embryonic fiber." The active growth of this embryonic fiber brings it in connection with the old fibers of the central extremity, through the intervening cicatricial tissue. After this connection is established the myelin

arises as isolated drops in the protoplasm of the embryonic fibers by a process of chemical differentiation. The drops afterward unite to form a continuous tube of myelin, and into this the axis of a fiber of the central extremity grows down.

The review of surgical literature corroborates the results of experimental work in showing that immediate union without degeneration is impossible, but that under proper conditions union between the two severed extremities will take place, and be followed by regeneration of the peripheral extremity.

DR. SANGER BROWN, of Chicago, read a paper entitled "Hints Upon the Pathology of So-called Friedreich's Disease, Based Upon the Study of a Series of Twenty-three Cases," in which he pointed out that there has been such a large accumulation of recorded facts that the conclusions previously reached are no longer tenable. Two broad divisions may be made: in one heredity can be demonstrated to play a prominent part; in the other this influence is not apparent. Of the former, the so-called Friedreich's disease may be taken as a type, and of the latter the ordinary form of tabes; and unless it should be demonstrated that heredity plays an important part in the progressive form of spinal muscular atrophy, and in disseminated sclerosis, the pathologic process giving rise to the symptom-complex, commonly described as Friedreich's disease, must, at the present time, be regarded as constituting the sole instance of hereditary degenerative disease of the central nervous system. In this disease, the essential pathologic features are that certain tissues have derived such a deficient vital endowment from the parent that they undergo a more or less premature, rapid, and extensive degeneration; further, the effect of this process is mainly, if not exclusively, confined to the so-called upper nerve-segment and to the conducting filamentary process, and does not involve the body of the cell of this segment.

Dr. G. FRANK LYDSTON, of Chicago, followed with a paper entitled "Reflex Genito-urinary Neuroses." He stated that there is, perhaps, no subject in the whole range of genito-urinary disturbances of greater importance than the varied phenomena involving nervous derangements that are due, directly or indirectly, to pathologic conditions of the various portions of the urethral canal.

When it is considered what a vast amount of labor and talent has been devoted to the study of the reflex neuroses of the female, due wholly or in part to pathologic conditions of the uterus and its appendages, it is surprising that more attention has not been given to analogous conditions in the male, due to disturbances of the generative organs and especially of the urethra.

Quite a close similarity exists between some of the morbid conditions of the prostate gland and those affecting the uterus. Physiologically, the prostate, or at least a portion of it, is the homologue of the uterus, there being the closest resemblance in the muscular structure of the two bodies. If the muscular tissue becomes perverted in growth, we have in the one uterine myoma, and in the other prostatic hypertrophy, the structure of the two morbid processes being strikingly similar. When, as is occasionally the case, the "third lobe" of the prostate becomes so enlarged as to form a distinct tumor, it is generally not unlike a pedunculated fibroid. It will also be found that certain remedies that have a pronounced action upon unstriated muscular fiber have a somewhat similar action upon the prostate and uterus, this being especially true of secale, ustilago maidis, and hamamelis. Certain sedative remedies act very similarly upon irritative affections of the uterus or ovaries, and upon those of the prostate. It will further be found that certain irritations affecting the prostate will produce effects quite like those produced by utero-ovarian irritation in women. False spermatorrhea (spermatophobia), pseudo-impotence, attended with disgust for the sexual act, melancholia, hypochondria, neuralgias, whether of the contiguous or of remote nervous filaments, and nervous inhibition amounting to almost complete paresis, are all possible results of urethral or prostatic irritation. These conditions are all represented by similar disturbances, such as hysteria and allied affections in the female, due to morbid conditions of the generative organs. The analogy between the results of prostatic catarrh and those of cervical catarrh is sometimes especially striking.

DR. L. BREMER, of St. Louis, read a paper entitled "The Reflex Theory of Nervous Disease." He stated that a peculiar antagonism exists among the representatives or followers of the several special branches. The chief interest of their reports generally centers in the observation that by successfully treating a disease of the organs to which *they* pay special attention, symptoms in distant organs that other specialists claim as their domain, have vanished, the additional remark being generally made, that the patient had been treated by a specialist of another order without any benefit. Dr. Bremer stated that the irritable bladder, the irritable urethra, prostate, rectum, or perineum, with distant associated nerve-complication—affections that do not call for operative interference any more than does the irritable breast or the irritable heart, have all more or less unnecessarily been tampered with from ignorance of the fundamental teachings of neurology. Cases of functional, central, and coarse systemic nerve-disease are locally treated as vesical or rectal affections.

Another phase in the evolution of theory and application of the law of reflex action, illustrative of the blending of reality and imagination, of truth and fiction, is the relation of ocular defects with certain neuroses. Since it has become known that visual abnormalities often accompany nervous diseases, oculists have tried to establish a causal connection between eye-affections and neuroses, just as gynecologists, aurists, rhinologists, dentists, etc., have done. The reflex theory here affords a new field for application. Dr. Bremer criticised the harmful and noxious feature of specialism, tending by its luxuriant growth to overshadow, obscure, and dwarf internal medicine, so-called—*i. e.*, that science which alone is capable of rendering the specialist fit for his work, and insuring that success which is not gauged by the amount of money he makes, but by the real and substantial aid that he bestows upon his fellow-men.

THIRD DAY—JUNE 9TH.

Morning Session.

DR. J. G. KIERNAN, of Chicago, read a paper entitled "Premature Paretic Dementia and its Forensic

Relations," in which he stated that many European and some American alienists had drawn the line between insanity attacking an intact organization and that attacking one already disordered by heredity or disease. What is true of insanity is also true of paretic dementia. The organization attacked may already be the victim of a constitutional disease like pulmonary tuberculosis, in which case the emotional exaltation of the *spes phthisica* becomes exaggerated with the emotional state of true paretic dementia, permeated, however, by a suspicional phase. The claim has been made that these are not cases of paretic dementia plus the individual defect, but new types of paretic dementia. Fournier, for example, went so far as to claim that syphilis produced a pseudo-paretic dementia. Dr. Kiernan has already shown that there are exceedingly valid grounds for refusing to admit the existence of such a type.

Regis has gone even further than Fournier, for he claims that "beside the type of paretic dementia which becomes developed in its own time, and which is the true paretic demetia, there are other cases which occur unexpectedly some time before, others after the ordinary period, which may be said to range between the ages of twenty-five and sixty-five years. The first may be designated as premature paretic dementia, the second as late paretic dementia. Cases before the age of twenty-five years are very rare, and only a few cases are recorded in which the onset occurred before the age of twenty. The premature type, unlike the ordinary type, has always a powerful etiological factor, such as heredity, syphilis, traumatism, saturnism, or general or local diathesis. These causes appear to determine in suitable cases an early predisposition and to prematurely place the brain in those conditions in which it is found in mature life. Premature paretic dementia has a slower progress and a longer duration; it is more frequently subject to remissions and is susceptible of a more or less permanent cure." To the designation premature, and to the positiveness of the position here taken, Dr. Kiernan has shown that most decided objections exist. The symptoms that Regis has grouped under this title may appear at any age, and are due to the organism attacked. Whatever be the etiologic factor, the organism attacked tinges the paretic dementia and not the etiologic factor. The normal organism furnishes the typical paretic dementia; the organisms in which a neurosis has been set up by pulmonary tuberculosis, syphilis, gout, rheumatism, traumatism, lead-poisoning, insolation, heredity, ataxia, or other causes, furnish atypical cases of paretic dementia presenting many features in common.

A prominent clinical feature is the temperature. Rottenbiller has found that in paretics the temperature is subnormal, and that extraordinary variations, without apparent cause, are frequent. In one case the temperature rose from 97° F. in the morning to 102.6° F. in the evening, falling again to 88° F. on the next morning. These characteristics are present in the early stages of the disease and in remissions. In these, the asymmetrical axillary temperature, to which attention was called about a decade and a half ago, is peculiarly frequent.

DR. THOMAS H. MANLEY, of New York city, followed with a paper entitled "The Relation of Special Violence to Hernial Protrusions through the Abdominal Walls."

He endeavored to demonstrate that the evolution of abdominal hernia of any type is never solely dependent on traumatic influences.

Taking the ground that the predisposing cause of hernia is always congenital, Dr. Manley maintains that concussive force can never be regarded in any other light than as an incidental event, which may aggravate the condition of an already existing hernia or provoke the full descent of another that has not yet left the cavity of the peritoneum. In all of the numerous post-mortem examinations that he has made, in cases of crushing injuries of the body, in which the solid or hollow viscera of the abdomen have been lacerated or rent, he has never discovered evidences of a recent abdominal protrusion. Hernial disease of the inguinal or crural variety is as common in the unmarried or non-childbearing as it is in those who have gone through the throes of labor and thereby subjected the organs to the violent expulsive efforts of parturition.

While the foregoing applies to violence as a cause of hernia, it must not be forgotten that local injuries, in varying degree, directly applied immediately over an already existing hernia, may be followed by serious consequences; although this must be very rarely the cause.

Dr. Manley related cases that have come under his own observation, in which it was alleged that the hernia had succeeded to injuries, but in which it was demonstrated incontestably that the patients had all had hernia before.

DR. T. D. CROTHERS, of Hartford, Ct., read a paper on "The Law of Periodicity in Inebriety." He contended that the periodicity of the drink-paroxysm is unquestioned evidence pointing to central brain-disease.

Heredity, nutrition, mental exhaustion, and environment, are all common causes or predisposing factors of this disease. Allied diseases, of which epilepsy is common, are associated, and are interchangeable with this and similar affections. The drink-periodicity follows a uniform line of events, ending in about the same way in nearly all cases. Its varieties and symptomatology are practically the same in the regularity of origin, development, and termination. These cases are the most certain and dangerous of all drink-neurotics, and are the least understood. The prognosis is uncertain, and full of dangerous possibilities; the natural tendency is to death. These cases are, however, quite amenable to treatment, if the measures are applied scientifically, and with full knowledge of the causes. Their insanity is more positive than that of other inebriates, but the drink-impulse is often controllable, and frequently disappears with treatment. This class requires the most careful medication and study.

Medico-legally, the most important problems are associated with these drink-paroxysms. Each case requires special study, and is to be judged by the general principles of physiology and psychology.

Such cases of necessity have impaired control of brain and nerve, and cannot be measured by the rules or standards of mental health. These cases should receive careful study and examination.

Tabulated facts, of sufficient number and accuracy, are needed from which to draw accurate conclusions, covering the laws that govern this class of neurotics. When the causes are known, their curability is assured by the application of means known to science.

DR. RICHARD DEWEY, of Kankakee, Ill., read a paper entitled "Insanity Following the Keeley Treatment for Inebriety." He stated that, as Superintendent of the State Insane Hospital at Kankakee, there had come under his observation eight patients committed directly after a residence at Dwight. In the first case, insanity had never occurred until after the Dwight treatment and a cure was effected. In the second case of morphine-habit, insanity developed after the Keeley "home-treatment." The insanity failed to yield to treatment. The third case was one of the alcohol-habit, sent to the Kankakee Insane Asylum after treatment at Dwight. The patient was cured of insanity, but he continued to drink. Case four, addicted to the alcohol, morphine and cocaine habits, was treated at Dwight, relapsed, became wildly insane, recovered mentally, but still drinks. Case five, addicted to the alcohol and morphine habits, was sent to the insane asylum from Dwight, and is still in the asylum. Case six, addicted to the alcohol, morphine and cocaine habits, took the Keeley "home-treatment," and was sent to Kankakee Insane Asylum. He was not insane before going to Dwight, but was received at Kankakee insane and was discharged cured. Case seven, an alcohol case in which insanity developed at Dwight, while under treatment, is still in the insane asylum. Case eight, an alcohol case, in which insanity developed one month after leaving Dwight, was not previously insane, and is still in the insane asylum.

In each of these cases insanity and melancholia directly resulted from the Dwight treatment. There seems to be no doubt that ordinary well-known tonics are combined with some narcotic or mydriatic drug, probably atropine. As to the presence of gold there is great doubt. Moral influences are remarkable; the patients go to Dwight with an earnest expectation of benefit, and are thus placed in the most favorable attitude for beneficial results. Keeley claims 95 per cent, of cures, while the figures of the bichloride of gold clubs are even higher, but both neglect to state what constitutes a cure. Does a cure mean one or five years' of abstinence? And do the figures given embrace all of the cases treated or only those about whom information is forthcoming?

In the first place, drunkenness is not like rheumatism, paralysis, tuberculosis and bodily diseases, whose presence or absence can be demonstrated. The cure of drunkenness is a more difficult matter to ascertain. No one can follow up all of Keeley's patients for months and years to see how they turn out. Patients may be still drinking in the outside world, and deny it, or deceive others. There are many whose paroxysms of drinking are separated by months or even years; and there must be hundreds who drop out of sight, especially if they relapse.

Dr. EUGENE S. TALBOT, of Chicago, followed with a paper entitled "Evidence of the Somatic Origin of Inebriety." He stated that Dr. Langdon Down first called the attention of the profession to the fact that contracted arches and high vaults were common among idiots. There is a larger percentage of deformities among inebriates than among any other defective class. These deformities, however, are not so pronounced as those found among idiots and the criminal classes. The large percentage of deformities and high vaults indicates a strong neurotic tendency early in life, even before the seventh year. Finally, if a child between seven and twelve years of age has arrested development of the superior maxilla, and possesses constitutional irregularities of the teeth and high vault, it can almost invariably be concluded that it will become, not always an idiot, but perhaps a genius in some one direction, or an idiot, or deaf, dumb, blind, insane, criminal, an extreme egotist, excessive tobacco-user, or an inebriate, all of these conditions coming under the head of degenerates, or neurotics. In making a diagnosis of any one of these classes of individuals, the following three conditions of deformities of the jaws should always be taken into account, viz: arrest of development of the superior maxilla, constitutional irregularities of the teeth, and high vaults.

DR. WILLIAM FULLER, of Grand Rapids, Mich., read a paper on "Cerebral Anatomy," which he illustrated by casts.

DR. THOMAS L. WRIGHT, of Bellefontaine, O., presented a paper entitled "Some Characteristics of the Human Mind When It is Placed at a Disadvantage." He stated that without any failure in itself the mind of man may be imposed upon by uncommon and so-called "false" presentations of external nature through the senses. It may also be the victim of misrepresentations arising from certain states of the brain and senses dependent upon disease. Again, it may be constrained and deceived by the action of toxic or other foreign (and perhaps irritant) agents upon the organism, and especially upon the brain and nerves.

The sources of all this mental error and perturbation may be either subjective—from within; or they may be objective, having no relation to the environment.

The traveller in the desert may be honestly misled by *mirages* presenting various deceptive appearances.

The strange condition known as hypnotic—sometimes called mesmeric—and in olden periods esteemed to be enchantment, is an illustration of a state of mind deceived, but powerless, because powerless to choose.

The over-sensitive brain may give birth to such illusions and hallucinations as will vividly deceive the mind and fill it with morbid delusions, beliefs, and purposes.

Toxic agents likewise may produce similar sensitive and mental effects. Alcohol, especially, affecting in a toxic manner the entire organism, may through anesthesia and its many other injurious properties, produce absolute mental and physical degeneration. The intellectual and moral faculties are overwhelmed *en masse*. All is confusion, wreck, incoherence.

In these Instances of mental incompetency, there is, in strict equity, a similarity, and not infrequently an identity in the character of the responsibility for conduct.

Attempts have been made to regulate disorganization, to classify confusion, but the subject of inebriate-responsibility is a difficult one, and it is far from being satisfactorily settled.

DR. THEODORE DILLER, of Pittsburg, reported "A Case of Tumor of the Pons, in Which Tapping of the Lateral Ventricles was Done for the Relief of Intracranial Pressure."

A healthy German, fifty-seven years old, free from syphilis, fell from a gondola car in October, 1890, striking the back of his head. He did not lose consciousness.

Soon afterward, he began to have headache, difficulty and uncertainty in walking, and paresis of the left side of the face, the left arm and the left leg, with difficulty in swallowing and in talking (bulbar symptoms). There was little disturbance of sensation. There were no convulsive seizures or twitchings at any time. There was no vomiting. An advanced degree of optic neuritis was found.

When the scalp was shaved, a distinct elevation of bone, about the size of pea, was noted just to the left of the median line, and immediately over the leg-center. Although the symptoms alone seemed to indicate a bulbar lesion, yet the history of the fall and the presence of a small bony excrescence tended to throw some doubt upon this diagnosis. There was, doubtless, a good deal of intra-cranial pressure. It was determined to trephine on the right side, over the leg-center, just opposite the small bony excrescence, and tap the lateral ventricle if nothing was found at that place.

The internal table of the skull was found healthy. There was no disease of the brain. The bony exostosis appeared to be congenital. The lateral ventricle was tapped, and two or three ounces of fluid removed. A rubber drainage-tube was inserted into the ventricle, and a large amount of fluid escaped up to the time of death of the patient, thirty-six hours later.

The autopsy revealed a tumor, as large as a walnut, on the left side of the pons, pressing upon the pyramidal tracts and olivary body. The growth proved to be sarcomatous.

The following were elected officers of the section for the ensuing year:

Chairman—Charles K. Mills, Philadelphia.

Secretary—J. G. Kiernan, Chicago.

Members of the Executive Committee—O. Everts, Cincinnati, Ohio, three-year term; H. N. Moyer, Chicago. two-year term, and Justin E. Emerson, Detroit, Mich., one-year term.

SECTION OF OPHTHALMOLOGY.

Of the forty-eight papers on the program, about forty were read. The majority related to purely ophthalmologic subjects, and were chiefly of interest to the ophthalmologist. A brief reference to some of the papers of more general interest is given.

The Chairman of the Section, DR. J. L. THOMPSON, of Indianapolis, in his opening address, advocated the preparation of fewer papers for the meetings and the allotment of more time for their proper discussion. He thought that in this way the meetings of the Section would be more productive and more helpful.

DR. B. ALEX. RANDALL, of Philadelphia, read a paper entitled "A Study of the Eyes of Three Hundred and Fifty-seven Boys in the Penn Charter School, of Philadelphia, with Notes on the Examination of School Children." He referred to the importance of such studies and to some of the defects in the examinations heretofore made. To be of value, such examinations should include a study of distant vision, of astigmatism, of muscle-balance, of the punctum proximum of each eye with Jaeger No. 1, the refraction by the direct method, retinoscopy, and if necessary by lenses, and of the color-sense. To these data should be added notes in regard to general health, etc.

DR. GEORGE T. STEVENS, of New York, read a paper on "The Relation of the Motor Muscles of the Eye to Certain Facial Expressions." He stated that years of observation of anomalies of the muscles that govern the movements of the eyeball, and the fact that remarkable changes often follow modification of these muscles, had led him not only to regard with greater care these changes, but to bring to the subject the aid of photography. Photographic portraits of more than two thousand persons had been taken, the records of whose ocular conditions have been carefully and repeatedly made. The facial conditions associated with relative tension of the various muscles were described in detail and illustrated by drawings.

DR. A. J. ERWIN, of Mansfield, Ohio, read a paper on "The Treatment of Incipient Cataract." He reported several cases in which the progress of the condition had been retarded or checked by the use of galvanism and the application of tincture of iodine to the lids. While not condemning operation, he suggested that a trial of the method indicated be made in cases in which the degree of vision retained is equal to the average vision that might be expected after extraction of the cataract.

DR. EUGENE SMITH, of Detroit, read a report of a "New Operation for Trichiasis and Distichiasis." Incisions are made between the faulty and normal hairs, exposing the hair-follicles and destroying the follicles connected with the distorted hairs by means of a fine galvano-cautery. The operation has been performed fifty times with satisfactory results.

DR. GEO. FRIEBIS, of Philadelphia, reported a "Case of Congenital Ectopia Lentis" in a boy seven years of age. In the discussion of the subject several speakers referred to families in which from three to five of the members suffered from the same condition. DR. SMITH, of Detroit, mentioned a case in which the individual had the power of dislocating the lenses at will by throwing the head forward, and replacing them by reversing the movement.

DR. B. L. MILLIKEN, of Cleveland, presented a paper entitled "Injuries to the Lens, with Cases." In the treatment the first requirement is removal of the foreign body, if this is possible, followed by the use of aseptic and antiseptic washes. Atropine, in solution sufficiently strong to dilate the pupil and keep the iris out of harm's way, is of great value. The eye should be kept at rest, as the cataract that follows is doubtless largely due to abusive use of the eye. The alternate use of atropine and eserine is of service in attachment of the iris. In the old, the use of atropine must be carefully watched to avoid the development of glaucomatous symptoms. In several of the cases reported, absorption of the lens followed the formation of the cataract, and useful vision was secured.

DR. CHARLES A. OLIVER, of Philadelphia, reported a similar case.

DR. JULIAN J. CHISOLM, of Baltimore, read a paper on "The Advantages of Optico-ciliary Neurotomy over Enucleation." Neurotomy is advocated if the eye is not deformed in appearance, although it may be sightless and the source of suffering and danger. Dr. Chisolm has performed the operation many times and has never seen any unpleasant consequences. While in a few cases subsequent enucleation became necessary, in the ma-

jority, division of the nerves proved to be all that was needed.

DR. F. C. HOTZ, of Chicago, read a paper on "Thiersch's Skin Grafts in Ophthalmic Surgery," giving the results of experiments in the operation for pterygium. After the pterygium is dissected back toward the caruncle, a graft of skin taken from the forearm is applied to the open space in such a way that one edge of the graft is placed in apposition with the margin of the cornea. In three cases thus treated the result was entirely satisfactory, the graft forming a barrier to the reproduction of the pterygium.

Several cases of "Orbital and Ocular Growths" were reported by DR. J. A. WHITE, of Richmond, Va., and DR. W. M. GRAY, of Washington; by DR. EDWARD JACKSON, of Philadelphia, and by DR. GEORGE E. FROTHINGHAM, of Detroit.

In the discussion that followed, the point was brought out by DR. KNAPP and others, that many of these orbital tumors, although under the microscope presenting the typical appearances of sarcoma, are benign in character and often disappear spontaneously.

DR. H. GRADLE, of Chicago, read a paper on "The Etiological Relations of Nasal Anomalies to Diseases of the Eye," detailing the various ocular affections that might be caused by nasal troubles.

DR. CHARLES H. THOMAS, of Philadelphia, read a paper entitled "An Operation for Stricture of the Lachrymal Duct," advocating stricturotomy for the radical cure. He described a stricturotome, consisting of a combined sound and knife. He reported cases in which the operation had been performed many years ago, and in which there has been no return of the trouble.

DR. LEARTUS CONNOR, of Detroit, read a paper entitled "Heterophoria as a Cause of Rhinitis and Tinnitus Aurium," reporting the case of a young woman who, for eighteen months, had been subject to frequently recurring attacks of rhinitis associated with tinnitus aurium, and in which the trouble was completely relieved by wearing prisms for the correction of heterophoria. The withdrawal of the prisms was always promptly followed by a return of the rhinitis.

DR. SAMUEL D. RISLEY, of Philadelphia, read a paper on "Conservatism in the Treatment of Disease of the Lachrymal Passages." He stated that the canaliculus should not be slit up unless absolutely necessary. Obstruction is often due to a general thickening of the mucous membrane, rather than to a localized stricture, and the treatment should be directed to the removal of the general thickening. It was shown that the lachrymal punctum is provided with a sphincter muscle. Dilatation of the punctum and stretching of this muscle is often sufficient. Probes are sometimes required, and occasionally it may be necessary to slightly nick the punctum.

DR. G. A. ASCHMAN, of Wheeling, read a paper entitled "Closure of the Lachrymal Puncta in Dacryocystitis as a Barrier against Infection of the Wounded Eyeball." A small galvano-cautery is introduced into the canaliculus.

DR. GEORGE M. GOULD, of Philadelphia, read a paper entitled "A Method of Infection, Treatment and Prophylaxis of Purulent Ophthalmia" (THE MEDICAL NEWS, June 11, 1892, p. 657).

The Section elected the following officers for the ensuing year: *Chairman*, Dr. Samuel D. Risley, of Philadelphia; *Secretary*, Dr. H. Gradle, of Chicago.

NEWS ITEMS.

International Dermatologic Congress.—The second Dermatologic Congress will be held in Vienna from the 5th to the 10th of September, 1892.

Many of the most distinguished representatives of Dermatology and Syphilography from all countries have promised to present papers, and the indications are that, from a scientific standpoint, the meeting will be a great success.

The Committee on Organization, through the President, Prof. Kaposi, has extended a cordial invitation to the members of the American Dermatological Association and of the New York Dermatological Society and others interested in dermatology in this country to be present.

The membership fee [five dollars] should be sent with titles of papers intended for presentation to the Secretary for North America, Dr. Prince A. Morrow, 66 West Fortieth Street, New York, or to the Secretary-General of the Congress, Dr. Gustav Riehl, Wien, Bellaria Strasse, 12.

Against Proprietary Medicines.—At the meeting of the Missouri State Medical Association, Dr. L. Bremer, of St. Louis, Mo., introduced the following resolutions, which were unanimously adopted:

Whereas, The evil of prescribing and recommending proprietary medicines is constantly increasing, much to the detriment of the profession and the public, especially the latter, many of whom are led into the drug-habit; therefore,

Be it resolved, by the members of the Missouri State Medical Association, That we condemn the practice on the part of some physicians of giving certificates as to the efficacy or special uses and advantages of proprietary medicines, or what is usually understood by this term.

Resolved, That as a body we recommend to the profession the future discontinuance of such medicines, if now used by them.

Medico-Legal Society of Chicago.—At the annual meeting, held June 4, 1892, the following officers were re-elected: President, Judge Oliver H. Horton; First Vice-President, Daniel R. Brower, M.D.; Second Vice-President, James Burry, M.D.; Treasurer, Joseph Matteson, M.D.; Secretary, Archibald Church, M.D. Drs. J. Eliott Colburn and Harold N. Moyer were unanimously elected to active membership.

BOOKS AND PAMPHLETS RECEIVED.

Medical Society of Franklin County; its History, and Sketches of Early Practitioners of the County. By John Montgomery, M.D. Chambersburg: Published by the Society, 1892.

Medical Society of the State of New York; Report on Capital Punishment. Reprint, 1892.

Uses of Water in Modern Medicine. By Simon Baruch, M.D. Vol. I. Detroit, Mich: George S. Davis, 1892.

Wayside Optics: Studies in a Railway Train. By Casey A. Wood, A.M., M.D. Reprint, 1892.

INDEX.

ABORTION, habitual, asafetida for, 410
Abscess, bilateral lumbar, associated with Pott's disease, 65
cerebral, successful operation for, 352
in the region of the medulla oblongata, two cases of, 300
of the temporal lobe, successful trephining for, 132
of the temporo-sphenoidal lobe and of the middle lobe of the cerebellum, 549
of the tibia of long standing and chronic ostitis, 269
Absorbent gauze, pads of, as a substitute for flat sponges in abdominal surgery, 713
Acne, remedy for, 302
rosacea, 265
Acrania, a case of, 298
Actinomycosis, 99
Adenoid growths, removal of, from the vault of the pharynx, 379
Adenoma, papilliferous fibro-cystic, of aberrant breast nodule, 269
Advertisements, copies of, desired, 328
sneak, 496
Age, at what, may a woman marry? 182
Agraphia, hysterical mutism with, 215
Aiken, H. K., M.D., chorea; endocarditis, death, 546
Air, change of, and baths in the summer diarrhea of children, conditions indicating, 631
washed, for hospitals and assembly rooms, 277
Air-impurity, practical test for, 373
Akromegalia and allied conditions, 410
Akromegaly, a case of, 237
Alabama law as to medical examinations, 195
Albumin in urine, an easy method of estimating the percentage of, 52
the percentage of, in urine, 83
Albumosuria, 76
Alcohol, diphtheria, lead, etc., forms of pseudo-tabes due to, 368
Alcoholism, chronic, with obstinate hiccough, 76
Allis, Oscar H., M.D., ununited fractures, 1
Allyn, Herman B., M.D., three fatal cases of cerebro spinal meningitis, with autopsies, 540
Amœba coli, 40
Amebic dysentery, 78
American Medical Association, 659, 697
pork in Germany, 77
Ammonium bromide and antipyrin in epilepsy, 272
Amputation at the hip-joint by Wyeth's method, 349
Amputations, three shoulder-joint, 409
Anasarca, puncture for the relief of, 410
Anastomosis, lateral, for carcinoma of the bowel, 380
Anatomy, systematic use of the eye in teaching, 179
Anemia, pernicious, atrophy of the gastric mucous membrane and degeneration of the spinal cord, 381
Anesthesia, local, 243
Anesthetic, chloroform as an, 271
Aneurism, excision of an obliterated, 75
of the ascending aorta, 159
of the heart, 381
with symptoms of angina pectoris, 271
of the renal artery, 132
Angina, acute, 854
pectoris, 347
symptoms of, accompanying aneurism of the heart, 271
Angio-neurotic, acute, or circumscribed cutaneous edema, 323
Anomalous congenital function; associated synchronous movements of the upper extremities, 74
Anomaly in the mechanism of labors in face presentation, a hitherto undescribed, 301
Ante-partum hemorrhage in which the placenta was normally situated, a case of, 118
Anthrax and analogous conditions, treatment of, 188
cured by excision and the employment of ipecacuanha, 187
Antidote to phosphorus—potassium permanganate, 244
Antipyretics in typhoid fever, the dangers of, 457
Antipyrin and ammonium bromide in epilepsy, 272.
in the diarrhea of children, 20
in whooping-cough, 48
Antisepsis, intestinal, in typhoid fever, by means of bismuth subiodide and salol, 75
Antiseptic diuresis, 438
treatment of burns, 160
Antitoxines, therapeutic employment of, 325
Antrum of Highmore, aspergillus mycosis of, 104
Anus, case of imperforate; successful operation through the perineum, 267
Aorta, aneurism of the ascending, in association with chronic nephritis, 159
Aortic valve, rupture of, from physical exertion, 187
Aortitis, perforative, 216
Appendix vermiformis, a peculiar case of probable perforation of, 130
Arm, ulcer of the, 482
Arsenic, pigmentation of the skin from 466
Arteries, both common iliac, occlusion of, gangrene; death, 96
Arterio, sclerosis, the vertigo of, 715
Artery, middle cerebral, a case of bilateral embolism of the, 174
Arthritis, secondary miliary tuberculous, 186
suppurative, of the knee-joint, 482
Asafetida for habitual abortion, 410
Ascococcus gangrenosus; report of a case of gangrene, with bacteriologic investigation, 375
Ashhurst, William W., M.D., tracheotomy for obstruction of the pharynx, with removal of mucous polypus from the nose, 72
Ashton, William Easterly, M.D., pads of absorbent gauze as a substitute for flat sponges in abdominal surgery, 214
Aspergillus-mycosis of the antrum of Highmore, 104
Asthenopia and intra-nasal disease, note on, 378
headache and other nervous symptoms, contributions to the study of heterophoria, and its relations to, 146
Asthma, for the paroxysms of, 382
the mechanism and treatment of, 580
the treatment of, 696
Atrophy of the gastric mucous membrane, degeneration of the spinal cord, pernicious anemia, 381
Atrophy of the maxillary bones, in posterior spinal sclerosis, 301
Atropine for gastric hyper-secretion, 552
Attenuation of tubercle-bacilli, 333
Auditory canal, general symptoms from accumulation of cerumen in the, 600
Aural affections, lysol in the treatment of, 187
Auricle, endocarditis of, 295
Auscultation, cranial, 187

BACILLI coli communis and typhoid-bacilli, the differentiation of, 552
Bacillus of influenza, 237
of measles, 579
of typhoid fever and the bacillus coli communis, 216
Bacteria, influence of light upon the growth of, 381
reaction from an aqueous extract obtained from, 104
relation of, to disease, 393
Bacterial poisons, relations of various, to immunity and cure, 551
Baldness, prescription for, 272
Balsam of Peru, poisoning by, 353
Barclay, Robert, A.M., M.D., a case of sudden deafness from inherited syphilis, 489
Barker, William S., M.D., polyuria in phthisis controlled by full doses of ergot, 19
Baruch, Simon, M.D., conditions indicating change of air and baths in the summer diarrhea of children, 681
Baths, cold, in the treatment of typhoid fever, 594
Beam, William, M.D., and Henry Leffmann, M.D., analytical notes on commercial cod-liver oil emulsions, 577
examination of some commercial varieties of hydrogen dioxide, 404
Beaumont, C. W., M.D., therapeutics, present and prospective, 570
Bedside instruction in hospitals, 603
Bell, James H., M.D., medical ethics gone to seed, 12
Benzol in influenza, 244
Benzosol as a substitute for creasote, 188
Bevan, D., M.D., ascococcus gangrenosus; report of a case with bacteriologic investigation, 375
gangrene of the testicle, 490
Bile in the urine, forms of disease characterized by the presence of, 281
Bile-duct, two fatal cases of obstruction of the common, 464
Biliary ducts, catheterization of the, 104
Binkley, J. T., Jr., M.D., extensive trephining for epilepsy from traumatism; complete recovery, 548
Bismuth subiodide and salol, intestinal antisepsis in typhoid fever by means of, 75
Bixby, Herbert B., M.D., angina pectoris, 347
Black snake-root for dysmenorrhea and ovarian irritation, 652
Bladder and perineum, carcinoma of, 487
Blended Tocci brothers, of Locana, 629
"Blind preparations," 470
Blood, a study of the, after hemorrhage, 225
during treatment with tuberculin, 580
in acute rheumatism, 437

Blood of animals treated with tuberculin, an immunity-conferring principle in the, 301
recent progress in the study of the, 303
the toxicity of, in mammifera after removal of the supra-renal capsules, 437
toxicity of, in puerperal eclampsia, 354
Bowel, acute strangulation of, in a child two years of age, 47
a swallowed plate of false teeth passed by the, 160
carcinoma of the, lateral anastomosis for, 380
obstruction of the, by a gall-stone, 381
passage of a renal calculus by the, 242
Bowen, W. Sinclair, M.D., a fatal case of laryngismus stridulus in an infant six days old, 434
Bradley, Alfred E., M.D., a case of imperforate anus; successful operation through the perineum, 267
Brain, bullet in, for twenty-nine years, 301
Braislin, William C., M.D., naso-pharyngeal stenosis, 344
filth diseases, 523
Breast-milk, clinical examination of, 713
-nodule, aberrant, papilliferous fibro-cystic adenoma of, 269
Breath, fetid, remedy for, 302
Bringer, J. T., M.D., a case of acute general chorea, 491
Bronchiectatic cavity due to impaction of an intubation-tube, 243
Bronchitis, for the cough of, 354
Brown, George S., M.D., three shoulder-joint amputations, 409
Bryan, J. H., M.D., acute edema of the larynx, with report of a case resulting from pyemia, 141
Buffalo, University of, progress in, 276
Bulbar palsy, acute, of inflammatory origin, 579
Bullet in the brain for twenty-nine years, 301
Burnett, Swan, M.D., contributions to the study of heterophoria and its relation to asthenopia, headache, and other nervous symptoms, 146
Burns, for, 632
glycerin in the treatment of, 580
the antiseptic treatment of, 160

CACHEXIA, pachydermic, cretinoid idiocy with, 244
Calculus, renal, passed by the bowel, 242
Caldwell, G. C., B.S., Ph.D., oleomargarin, 113
Camphoric acid for the night-sweats of pulmonary tuberculosis, 293
Canals, semicircular, the functions of, 101
Canon, J. J., M.D., a fetal monstrosity, 436
Capital punishment, castration as a substitute for, 499
Capsules, supra-renal, the toxicity of the blood in mammifera after the removal of, 437
Carbolic acid in influenza, 272
Carcinoma mammary, osteo-medullary lesions of, 520
of the bowel, lateral anastomosis for, 380
of the bladder and perineum, 487
of the pylorus, resection of the stomach for, 243
of the stomach, 187
of the uterus, hysterectomy for, 493
the infectiousness of, 271
the transmissibility of, 354
treatment of, 272
Cardiac pain, the different forms of, 690
Carr, W. P., M.D., systematic use of the eye in teaching anatomy, 179
Castor oil, palatable, 302
Castration as a substitute for capital punishment, 499
Catheterization of the biliary ducts, 104
Cerebellum, bronchiectatic abscess of the temporo-sphenoidal lobe and middle lobe of, 549
Cerebral abscess, successful operation for, 354
matter, gray, injections of, in the treatment of neurasthenia, 354
thrombosis, with report of two cases, 176
Cerebro-spinal meningitis, three fatal cases of, with autopsies, 540
Cerumen in the auditory canal, general symptoms from accumulation of, 600
Cervix uteri, a unique case of polypus of the, 239
Cirrhosis of the liver, hypertrophic, 8
Chapin, Charles V., M.D., are diphtheria and typhoid fever filth-diseases?, 312
Charities and correction, national conference of, 469
Charity-abuse, practical results of, 21
Charlatan turns philanthropist, 163
Chew, Samuel C., M.D., the different forms of cardiac pain, 690
Chicago, "Christian science" in, 522
Tribune, hydrogen peroxide and, 415
Children, the diarrhea of, antipyrin in, 20
Cholecystocolotomy, 437
Cholecystenterostomy for gall-stones, 381
Chloroform as an anesthetic, 271
impure, toxic effects of, 301
-poisoning, a case of, 75
Chloroma, 520
Chlorosis, for, 696
Chordæ tendineæ of the mitral valve, rupture of, 295
Chorea, acute general, a case of, 491
an aggravated case of, 296
endocarditis; death, 546
exalgin in, 324
following influenza; death, 520
hereditary, 465
in pregnancy, 41
Christian science in Chicago, 522
Church, Archibald, M.D., the vertigo of arterio-sclerosis, 715
Clavicle, fractured, new dressing for, 407
action of serratus magnus in, 500
Climate-therapy, the cardinal truth of, 110
Coal-burning, medical aspects of, 51
-gas poisoning, six cases of, 68
Cocaine, death from, 385
Coccydynia, for, 354
Codeine, untoward effects of, 390
Cod-liver oil emulsions, 577
Coffee-leaf tea, 470
Colporrhaphy, anterior, Prof. Winckel's, 322
Common bile-duct, obstruction of, two fatal cases of, 464
"Common cold," severe, due to reflexes from the eye, 300
Common-sense in medical practice, need of, 517
Conjunctiva, scarification of the, fatal hemorrhage from, 188
Conner, P. S., M.D., late syphilis, 85
Consanguineous marriages, 107
Consultations with sectarians and quacks, 439
"Contagion" and "infection," 307
or infection—a question of definition, 217
the doctrine of, the influence of, upon the death-rate from tuberculosis in the city of Philadelphia, 539
Coplin, W. M. L., M.D., diagnosis of fracture of the femur, 270
Cord, hemorrhage into, with report of a probable case, 318
spinal, non-traumatic hemorrhage into the, 183
Corlett, William Thomas, M.D., a few suggestions on diagnosis and treatment of lupus, 687
Correspondence—
Chicago, 110, 167, 333, 447
Correspondence—
Detroit, 586
New Orleans, 391
New York, 390, 474, 584
Coryza, remedy for, 302
Cough, periodic nocturnal, in infants, 493
of acute bronchitis, for the, 354
Cranial auscultation, 187
Craniotomy, linear, 236, 353
Creasote, benzosol as a substitute for, 188
for influenza, 438
Cresoliodide, 188
Cretinoid idiocy with pachydermic cachexia, 244
Crilf, G. W., M.D., injuries of the foot, 291
Crouch, Henry C., M.D., relation of bacteria to disease, 393
Cure wanted, 108
Cutaneous edema, circumscribed, acute angio-neurotic or, 323
Cyst, double hemorrhagic subdural, 323
hydatid, of the anterior abdominal wall, 494
meibomian, 482
of the peritoneum resulting from impacted gall-stones; autopsy, 298
Cystitis, the treatment of, with mercuric chloride, 354
Cystoscopy, 354

DABNEY, WILLIAM C., M.D., the appearance of nervous symptoms in the early stages of diphtheria, 74
DaCosta, Professor J. M., cases from the clinic of, 427
six cases of coal-gas poisoning, one of them with autopsy, 68
Dangers of lavage, some, 494
Darling, C. G., M.D., fracture of the neck of the radius and backward dislocation of the ulna, 18
Deafness, sudden, from inherited syphilis, 489
the relief of, the employment of pilocarpine for, 467
Death from cocaine, 385
-rate from tuberculosis in the city of Philadelphia, influence of the doctrine of contagion upon, 539
of 1890, the English, the influence of influenza on, 136
Deaver, John B., M.D., tuberculous peritonitis from a surgical standpoint, 316
Defects in the structure or functions of the eyes as a source of morbid phenomena, 330
Dementia, paretic, the etiology of, 324
Denver, typhoid fever in, causes of the diminished prevalence of, 260
infectious disease in cities, with especial reference to, 617
Deodorant, a 302
for iodoform, 302
Deodorized iodoform, 410
Depravity, surgical instruction for the encouragement of vice and, 382
Dermatologic practice, sodium ethylate in, 410
tumenol in, 438
Diabetes mellitus of unusual course, 609
Diarrhea of children, antipyrin in, 20
summer, of children, conditions indicating change of air and baths in, 681
Dietetic treatment of some important neuroses, 5
Diphtheria and its treatment, 459
and typhoid fever: are they filth-diseases? 312
peroxide of hydrogen in, 389
the appearance of nervous symptoms in the early stages of, 74
treated by the early application of germicides, 256
treatment of, 216, 382
Diphtheritic poison, the action of soluble ferments upon, 437

Disease, forms of, characterized by indigestion, the presence of bile, urates, and uric acid in the urine, and by nervous symptoms, 281
infectious, in cities; with especial reference to Denver, 617
relation of bacteria to, 393
the individuality of, 23
the influence of heredity in the prevention of, 169
the rational signs of, 23
Diseases, surgical, of the urinary organs, 567
Dislocation, complete outward, of the radius and ulna at the elbow, 549
of the hip, 482
"Dispensary abuses," 82
correction of, 329
practice, regulation of, 497
Dissecting aneurism of the ascending aorta in association with chronic nephritis, 159
District of Columbia medical-practice bill, 470
Diuresis, antiseptic, 438
Dodge, W. I., M.D., the treatment of suppuration of the knee-joint, with illustrative cases, 713
Dogmas, medical, 191
Double hemorrhagic subdural cyst, 323
Drainage after uterine dilatation for endometritis, 404
Drug manufacturers as medical teachers, 584
Druggist, the retail, 245
Duhring, Louis A., M.D., psoriasis—acne rosacea—epithelioma—tinea favosa—sycosis—hyperidrosis, 265
Dulles, Charles W., M.D., obscure forms of gout, 253
Duties of the elder practitioner, 189
of the younger practitioner, 161
Dysentery, amebic, 78
epidemic, etiology of, 381
Dysmenorrhea and ovarian irritation, black snakeroot for, 555

ECLAMPSIA, 505
puerperal, peculiar case of, 73
Edema, acute angio-neurotic or circumscribed cutaneous, 322
acute, of the larynx, with the report of a case resulting from pyemia, 141
neurotic, following traumatism, three cases of, 432
Edwards, Arthur R., M.D., Ehrlich's test of the urine in typhoid fever, 365
Effusion, sudden death in pleurisy without, 600
Ehrlich's test of the urine in typhoid fever, 365
Eisendrath, D. N., M.D., a case of bilateral embolism of the middle cerebral artery, 175
Elbow, case of complete outward dislocation of the radius and ulna at the; reduced after division of the tendon of the triceps, 549
excision of the, note on, 492
Elecampane-root, and helenine, in the treatment of leucorrhea, 696
Electricity in gynecology, the present status and claims of, 561
in "la grippe," 82
Electro-puncture: its most useful modifications and its value in the treatment of fibroid tumors, 151
-therapeutics in America, 92
Elephantiasis arabum of the leg; ligature of the femoral artery; recovery, 180
Elsner, Henry L., M.D., the clinical and pathologic significance of vertigo, 477
Embolism, bilateral, of the middle cerebral artery, a case of, 174
Embryologic material, request for, 418
Empyema of the gall-bladder, 466
Emulsions of cod-liver oil, analytic notes on commercial, 577
Endocarditis following chorea; death, 516
Endocarditis of the auricle and rupture of the chordæ tendineæ of the mitral valve, 295
Endometritis; uterine dilatation and drainage, 404
Engel, Hugo, A.M., M.D., mental improvement following operation on the skull, 449
Enteric fever in an infant nine months old, 301
the cause of the inutility of ergot in the intestinal hemorrhage of, 111
Entropion and distichiasis, Pagenstecher's operation for, illustrated by two cases, 185
Enucleation, goiter successfully treated by injections and, 552
Epidemic dysentery, etiology of, 381
of influenza, the prevailing, 14
of quackery, the etiology, diagnosis, and treatment of the prevalent, 510
Epilepsy, ammonium bromide and antipyrin in, 272
from traumatism, extensive trephining for; complete recovery, 548
laryngeal, case of, 319
treatment of, 467
unusual phenomena of, 215
Epileptic disturbance, seat and origin of, 718
Epileptics, employment of, 133
Epithelioma, 265
Equestrianism, a contribution to the study of accidents resulting from, 228
Ergot, cause of the inutility of, in the intestinal hemorrhage of enteric fever, 111
polyuria in phthisis controlled by full doses of, 12
Erysipelas appearing in the course of puerperal pyemia, 241
facial, complicating typhoid fever, 205
pilocarpine nitrate in, 551
the etiology of, 70
treatment of, 580
Eshner, Augustus A., M.D., cases from the clinic of Professor J. M. DaCosta, 427
two fatal cases of obstruction of the common bile-duct, 464
Eskridge, J. T., M.D., poliomyelitis, 211
Esophagus, gastrostomy in stricture of, 132
Ether, the reaction of urine with, 494
Ethics of proprietary preparations, 355
medical, gone to seed, 12
Exalgin in chorea, 324
Examinations, medical, the Alabama law as to, 195
State medical, the necessity of, 191
Excision of the elbow, note on, 482
of the initial lesion, the causes of failure to abort syphilis by, 157
Exophthalmic goiter, the urinary ptomaïnes of, 300
pathology of, 520
thyroidectomy in, 132
Expert testimony, 273
Extension, the treatment of posterior spinal sclerosis by, 438
Extra-genital syphilitic infection, 579
Eye, reflexes from the, severe "common cold" due to, 300
Eyes, artificial, inserted within a week after enucleation, 83
defects in the structure and functions of the, as a source of morbid phenomena, 330
Eye-strain and headache, 306

FALLOPIAN tubes, can we drain the, 29
False teeth, a swallowed plate of, passed by the bowel, 160
Farrar, J. D., M.D., intestinal antisepsis in typhoid fever by means of bismuth subiodide and salol, 75
Faucial tonsils removed by the galvano-cautery snare, 321
Fecal impaction, treatment of, by galvanism, 632
Felt jacket, a form of, 167
Femur, fracture of the, diagnosis of, 270
ununited, 482
simple fracture of the shaft of, treatment of, with the long splint, 684
Ferguson, John, M.D., the dietetic treatment of some important neuroses, 5
Ferments, soluble, the action of, upon the diphtheritic poison, 437
Fetal monstrosity, a, 436
Fetid breath, remedy for, 302
Fever, enteric, in an infant nine months old, 301
intestinal hemorrhage of, cause of the inutility of ergot in, 111
the management of, 495
typhoid, causes of the diminished prevalence of, in Denver, 260
facial erysipelas complicating, 205
typhus, in New York, 248
uses of, the dangers of antipyretics in typhoid fever, 457
Fibroid tumor of the uterus, 268
tumors, electro-puncture in the treatment of, 151
of the uterus, 645
Filth-diseases, 524
are diphtheria and typhoid fever, 312
Fingers, the union of severed, 222
Fistula in ano, 573
of the lower jaw, 482
recto-vulvar, 41
urinary, following supra-pubic cystotomy, 487
Fistulæ, tuberculous, lactic acid for, 552
Flick, Lawrence F., M.D., the influence of the doctrine of contagion upon the death-rate from tuberculosis in the city of Philadelphia, 539
Foot, injuries of the, 288
Forbes, W. S., M.D., papilliferous fibro-cystic adenoma of aberrant breast-nodule, 266
surgical diseases of the urinary organs, 570
Forceps-deliveries, ocular injury in, 440
Fracture, longitudinal, of the patella, 215
of the base of the skull, 258
of the femur, diagnosis of, 270
of the femur, ununited, 482
of the neck of the radius and backward dislocation of the ulna, 18
Fractured clavicle, a new dressing for, 407
the action of the serratus magnus in, 300
Fractures, ununited, 1
Fraser, A. H., M.D., a case of longitudinal fracture of the patella, 215
Fraud, a, 308
Frauds, therapeutic; how the medical profession is deceived thereby, 386
Frost-bite, for, 464
Fulton, Alexander, M.D., description of a new suture, 103
diphtheria and its treatment, 459
removal of tumors of both ovaries, 131
Function of the semicircular canals, 101

GALL-BLADDER and ducts, surgery of the, 651
empyema of the, 466
-stone, obstruction of the bowel by a, 381
-stones, 303
cholecystenterostomy for, 381
impacted, resulting in cyst of the peritoneum; autopsy, 298
Galvanism, the treatment of fecal impaction by means of, 632
Galvano-cautery snare, removal of the faucial tonsils by, 321

Gangrene of the testicle, 490
report of a case of, with bacteriologic investigation, 375
Gaston, J. McFadden, M.D., Surgery of the gall bladder and ducts, 651
Gastric hypersecretion, atropine for, 552
juice, influence of, upon the virus of hydrophobia, 466
mucous membrane, atrophy of, etc., 381
research, modern, misconceptions and misnomers revealed by, 589
Gastritis, catarrhal, 648
Gastrostomy in stricture of the esophagus, 132
Germany, American pork in, 77
Germicides, early local application of, in diphtheria, 256
Gestation, ovarian, 719
Gihon, Albert H., M.D., address on general medicine, 692
Glandular tuberculosis and pseudo-leukemia, differentiation of, 437
Glycerin in the treatment of burns, 580
suppositories, distant action of, 223
Goat, tuberculosis in the, 188
Goiter, exophthalmic, pathology of, 520
the urinary ptomaïnes of, 300
thyroidectomy in, 132
treatment of, 302
Gold and manganese, the use of, in tuberculosis, 128
and sodium chloride in the treatment of paretic dementia, 580
Good, I. W., M.D., passage of a renal calculus, by the bowel, 242
Gould, Geo. M., M.D., the etiology, diagnosis, and treatment of the prevalent epidemic of quackery, 510
a method of infection, treatment, and prophylaxis of purulent ophthalmia, 657
the function of the lachrymal puncta, 717
Gout, concealed, 305
obscure forms of, 253
Graduation fee, the, 555
Graham, John, M.D., will the general practitioner cease to exist and his place be taken by specialists? 578
Graham, N. F., M.D., simple fracture of the shaft of the femur and its treatment with the long splint, 684
Gravid uterus, a case of retroversion of the, in a primipara, 492
Greene, F. M., M.D, case of antepartum hemorrhage in which the placenta was normally situated, 18
"Grippe, la," electricity in, 82
Gross, Samuel D., monument fund, 497
Gunshot injuries of the spinal cord, 353
Gynecology and obstetrics, some mooted points in, 654
the present status and claims of electricity in, 561

HALE, G. V., M.D, pilocarpine nitrate in facial erysipelas, 551
Hall, J. N., M.D., a contribution to the study of accidents from equestrianism, 228
Hamilton, John B., M.D., hygroma—dislocation of the hip—fistula of the lower jaw—suppurative arthritis of the knee-joint, 482
Hansell, Howard F., M.D., Pagenstecher's operation for entropion and distichiasis, illustrated by two cases, 185
Hare, H. A, M.D., a case of akromegaly, 237
Harris, Robert P., M.D., the blended Tocci brothers of Locana, Italy, 629
Thomas J., M.D., the microscope as an aid to diagnosis in diseases of the uterus, 480
Hartzell, M. B., M.D., lymphangioma circumscriptum, 66
Haslea, S. M., M.D., a case of hereditary syphilis, 717
Hawkes, Marshall, M.D., injury to the spine; invention and application of a paper jacket, 57
Headache and eye-strain, 309
Health-service, national, importance and necessity of, 328
Heart, aneurism of, 381
with symptoms of angina pectoris, 271
-disease, morphine in, 438
fatty, with slow pulse, 465
palpitation of, 22
valvular lesions of the, 135
-contraction and inspiratory acts, each 54 per minute, unique case of rickets with synchronous, 213
Heidner, G. A., M.D., peculiar case of puerperal eclampsia, 73
Helenine and elecampane-root in the treatment of leucorrhea, 696
Hematozoon of malaria, the unity of, 520
Hemenway, Henry Bixby, M.D., lectures versus recitations in medical colleges, 575
pharyngomycosis, 38
Hemophilia, 227
Hemorrhage, antepartum, a case of, in which the placenta was normally sinuated, 18
basal, successful trephining for, 132
fatal, from scarification of the conjunctiva, 188
intestinal, of enteric fever, inutility of ergot in, 111
into the cord, with report of a probable case, 318
intra-dural, with undiscovered compression, 544
in typhoid fever, 139
the treatment of, 53
non-traumatic, into the spinal cord, 184
study of the blood after, 225
Hemorrhages, visceral in still-born children, 160
Hemorrhagic purpura, with a tumor of the thymus gland, 160
Hemorrhoids, for, 494
treatment of, 382
Hereditary chorea, 465
Hernia, acquired crural ovarian, 297
incarcerated inguinal, successful resection of gangrenous bowel for, 104
radical treatment of, 437
Heterophoria, a contribution to the study of, and its relation to asthenopia, headache, etc., 151
Hiccough, treatment of, by compression of the phrenic nerve, 302
Hielscher, Julian M., M.D., a case of chloroform-poisoning, 75
Himmelsbach, George A., M.D., an aggravated case of chorea, 296
Hip, dislocation of the, 482
-joint, amputation at the, by Wyeth's method, 349
Hirst, Barton Cooke, M D., chorea in pregnancy—the care of the umbilical cord—mammary binders—recto-vulvar fistula—mammary activity and menstruation in the new-born—lumbo-sacral kyphosis, 41
tympanites and pregnancy, 156
Hoarseness, for, 324
Homans, John, M.D., a case of complete outward dislocation of the radius and ulna at the elbow reduced after division of the tendon of the triceps, 549
fibroid tumors of the uterus, 645
Homatropine, poisoning from, used in the examination of refraction, 102
Home industry from a medical point of view, a plea for, 306
Horwitz, Orville, M.D., three cases of neurotic edema following traumatism, 432
Hospitals and assembly-rooms, washed air for, 277
bedside instruction in, 603
Howard, Hamilton P., M.D., mistletoe as an oxytocic, 547
Huston, W. O., M.D., a case of puerperal septicemia, 46
Hutchinson, Woods, M.D., the influence of heredity in the prevention of disease, 169
Hydatid cyst of the anterior abdominal wall, 494
Hydatidiform mole, 402
"Hydrargyrum lactatum," so-called, 79
Hydrarthrosis of the knee-joint; paracentesis; irrigation; recovery, 493
Hydrogen dioxide, examination of some commercial varieties of, 404
in re, 125
the therapeutic applications of, 158
disulphide in the urine, a case of, 154
peroxide and the Chicago Tribune, 413
in diphtheria, 389
Hydrophobia, the influence of gastric juice upon the virus of, 466
Hygiene institute of, first in the United States, 276
laboratory of, the objects, plans, and needs of the, 230
and the State Board of Health, 276
of the University of Pennsylvania, opening of, 246
Hygroma, 482
Hyoronephrosis, movable kidney and, 188
Hyperidrosis, 265
Hypersecretion, gastric, treated with atropine, 552
Hypertrophic cirrhosis of the liver, 8
Hysterectomy for carcinoma of the uterus, 495
Hysteria in a girl of thirteen, 381
Hysterical mutism with agraphia, 215

IDEALS, professional, a political parallel, 467
Idiocy, cretinoid, with pachydermic cachexia, 244
Iliac arteries, occlusion of both common, 96
Immunity and cure, relations of various bacterial poisons to, 551
artificial, to tetanus, the part played by the spleen in, 437
mechanism of, with its clinical lessons, 453
Imperforate anus; successful operation through the perineum, 267
Indigestion, forms of disease characterized by, 281
Infant, death of, from laryngeal obstruction, 410
intussusception in an, case of, 299
Infants, periodic nocturnal cough in, 493
"Infection" and "contagion," 307, 331
or contagion, a question of definition, 217
spyhilitic, extra-genital, 579
-proof and intoxication-proof, 552
Infectious disease in cities; with special reference to Denver, 617
Influenza, a bacillus resembling that of, found in the saliva of domestic animals, 658
and psychoses, 76
benzol in, 244
carbolic acid in, 272
creasote for, 438
double optic neuritis following, 271
followed by chorea and death, 520
by orchitis, 410
in Eastern Montana, 526
intermittent, 465
the influence of, on the English death-rate of 1890, 136
the nervous and mental phenomena and sequelæ of, 118

Influenza, the prevailing epidemic of, 14
the temperature in, 522
the treatment of, among the poor, 223
the treatment of, phenacetin in, 53
treatment of, 272
uterine complications of, 324
-bacillus, 137
-epidemic of 1789, 138
Ingravescent cerebral thrombosis and hemorrhage during pregnancy and parturition, 104
Insanity and responsibility, 21
puerperal, 41
Instruments, superannuated, asylum for, 388
Insufflation for tuberculosis of the larynx, 580
Intestine, traumatic rupture of, successfully treated by laparotomy, 20
Intoxication-proof and infection-proof, 552
Intra dural hemorrhage, with undiscovered compression, 544
-nasal disease and asthenopia, note on, 378
Intubation, collective inquiry concerning, 399
-tube, impaction of, causing a bronchiectatic cavity, 243
Intussusception in an infant, case of, 299
Inventions of new optical glass, recent, 207
Iodoform, a deodorant for, 302
deodorized, 410
inunctions of, in pulmonary tuberculosis, 410
-inunctions, further report on the treatment of tuberculosis by, 288
Ipecacuanha, a case of anthrax cured by excision and the employment of, 187
Ivory pegs, 140

JAUNDICE, 583
unusual causes of, 324
Javal's ophthalmometer, a critical study of the main defects of, 626
Jaw, fistula of the lower, 482
Jefferson Medical College, affairs at, 274
Johnston, W. W., M.D., on the nature and treatment of forms of disease characterized by the presence of bile in urine, 281
Jones, W. D., M D., hydrarthrosis of the knee-joint; paracentesis: irrigation: recovery, 493
Jugular vein, suppurative phlebitis of, successful treatment of, 244

KEELEY cure, a, 473
psychologic aspect of, 80
imitators, a couple of, 581
Talmage & Co. (unlimited), dealers in medico-religious humbug, 661
Keeleyized patients, information wanted as to, 720
Keen, W. W, M D., amputation at the hip-joint by Wyeth's method, 349
Kidney, movable, and hydronephrosis, 188
tuberculosis of, para-peritoneal nephrectomy for, 436
tuberculous, extirpation of a, 76
Kiefer, Guy L, M.D., a study of the blood after hemorrhage, and a comparative study of arterial and venous blood, 225
Knee-jerks, relation of the, to super-venosity, 381
-joint, hydrarthrosis of the; paracentesis; irrigation; recovery, 493
suppuration of, treatment of, 713
suppurative arthritis of the, 482
Kolipinski, Louis, M.D., a case of hydrogen disulphide in the urine, 154
Kyphosis, lumbo-sacral, 41

LABOR in face-presentation, a hitherto undescribed anomaly in mechanism of, 301
Laceration of the spinal cord, non-fatal, 544
Lachrymal puncta, function of, 717
Lactic acid for tuberculous fistulæ, 552
Lactopeptine, as to, 415
Laparotomy, two cases of traumatic rupture of the intestine successfully treated by, 20
Laryngeal obstruction by vomited milk-curd, death of infant from, 410
vertigo or laryngeal epilepsy, case of so-called, 319
Laryngismus stridulus, 467
fatal case of, in an infant six days old, 434
Larynx, acute edema of, with report of a case resulting from pyemia, 141
insufflation for tuberculosis of the, 580
Lateral anastomosis for carcinoma of the bowel, 380
sinus, successful treatment of suppurative phlebitis of the internal jugular vein and the, 244
Laurent, A., leprosy, 261
Lavage, some dangers of, 494
Lead, alcohol, diphtheria, forms of pseudo-tabes due to, 368
Lectures versus recitations in medical colleges, 575
Lee, W. R., M.D., scarlatina sine exanthemate, 186
Leffmann, Henry, M.D., and William Beam, M.D., analytical notes on commercial cod-liver oil emulsions, 577
and William Beam, M.D., examination of some commercial varieties of hydrogen dioxide, 404
Leg, elephantiasis of, with ligature of the femoral artery, recovery, 180
Legislation in Pennsylvania on medical and health matters during the session of 1891, 210
Leigh, C. W., M.D., a unique case of rickets with synchronous heart-contractions and inspiratory acts, each 54 per minute, 213
Leprosy, 261
the non-contagiousness of, 353
tuberculin in the treatment of, 244
Leptomeningitis, latent tuberculous, sudden death from, 551
Leucorrhea, elecampane-root and helenine in the treatment of, 696
Life-insurance, medical aspects of, 105
Light, influence of, upon the growth of bacteria, 381
Linear craniotomy, 236, 353
Lithemia, 33
Liver, hypertrophic cirrhosis of, 8
diseases of, toxicity of the urine in, 187
Lloyd, James Hendrie, M.D., a case of tumor of the mid-brain and left optic thalamus, 129
forms of pseudo-tabes due to lead, alcohol, diphtheria, 368
Lobinger, A. Stewart, M.D, lithemia, 33
Kate Reynolds, M.D., mechanical influences in pelvic disorders, 62
Loeb, Hanau W., M.D., removal of the faucial tonsils by the galvano-cautery snare, 321
Lung, right, perforating wound of, 155
Lupus, a few suggestions on diagnosis and treatmedt of, 687
primary, of the pharynx, case of, 36
Lydston, G. Frank, M.D., chronic ostitis and abscess of the tibia of long standing, 269
Lymphangioma circumscriptum, 66
Lysol in the treatment of aural affections, 187

MAGNESIUM sulphate, fatal poisoning by, 159
Manganese, the use of, in tuberculosis, 128
Malaria, irregular manifestations of, 326
the hematozoon of, the unity of, 550
Malignant disease of the female urethra, 187
Mammary activity and menstruation in the newborn, 41
Mammary binders, 41
Mammifera, toxicity of the blood in, after removal of the supra-renal capsules, 437
Marriages, consanguineous, 107
Massey, G. Betton, M.D., electro-puncture; its most useful modifications and its value in the treatment of fibroid tumors, 151
Massey, G. Betton, M.D., the present status and claims of electricity in gynecology, 461
Materia medica, recent additions to, 423, 561
Maxillary bones, atrophy of, in spinal sclerosis, 301
McCasey, J. H., M.D., cyst of the peritoneum resulting from impacted gall-stones; autopsy, 298
McCaskey, J. W., M.D., cerebral thrombosis, with report of two cases, 176
McGovern, Wm. P., M.D., actinomycosis, 99
McGuire, C. M., M.D., a case of tonsillitis; tracheotomy, 560
Medical aspects of coal-burning, 51
of life insurance, 105
colleges, lecturers *v* recitations in, 575
dogmas, 191
ethics gone to seed, 12
guild, 109
Mirror " on nostrums, 633
nihilism in Ohio, 414
practice, need of common-sense in, 517
profession: how it is deceived by therapeutic frauds, 386
solidarity of the race, 247
teachers, drug manufacturers as, 581
terms, the obsolescence of, 51
-practice bill in the District of Columbia, 430
Medicine and pharmacy, the perplexities of honest men in the professions of, in regard to "blind preparations," 410
general, address on, 692
Medico-religious humbug, Keeley, Talmage & Co. (unlimited), dealers in, 601
Medulla oblongata, two cases of abscess in the region of, 300
Meibomian cyst, 482
Meningitis, cerebro-spinal, three fatal cases of, 540
tuberculous, sudden death from, 551
Mental improvement following operation on the skull, 449
Mercuric chloride in the treatment of cystitis, 354
Meredith, Hugh B., M.D., hypertrophic cirrhosis of the liver, 8
Merrill, O. H., M.D., the use of gold and manganese in tuberculosis, 128
Methods, two, 219
Metrorrhagia, for, 324
treatment of, 580
Michael, J. Edwin, M.D, a report of eight additional cases of perineal section without a guide, 200
Micrococcus pneumoniæ crouposæ, 153
Microscope as an aid to diagnosis in diseases of the uterus, the, 480
Mid-brain, and left optic thalamus, a case of tumor of, 129
Milk-curd, death in an infant from laryngeal obstruction by, 410
-laboratories, the value of, for the advancement of our knowledge of artificial feeding, 631
-supply, elimination of the dangers connected with, 49
Miller, John S, M.D., acquired crural ovarian hernia, 297
Miller, W. H., M.D., fibroid tumor of the uterus, 268
Mills, Charles K., M.D., the nervous and mental phenomena and sequelæ of influenza, 118
Mistletoe as an oxytocic, 547
Mitral valve, rupture of the, with endocarditis of the auricle, 295

Moore, Veranus A., M.D., the technique and value of sputum-examination, 533
Morphine in heart-disease, 438
Monstrosity, a fetal, 436
Montgomery, E. E., M.D., endometritis; uterine dilatation and drainage, 404
some mooted points in obstetrics and gynecology, 654
Moyer, Harold N., M.D., catarrhal gastritis, 648
Munn, Wm. P., M.D., phimosis complicating simple venereal ulcer, carcinoma of the bladder and perineum, urinary fistula following supra-pubic cystotomy, etc., 487
Murphy, George, M.D., two cases of xeroderma pigmentosum, 435
Musser, J. H., M.D., the uses of fever; the dangers of antipyretics in typhoid fever, 457
Mutual Aid Association of the Philadelphia County Medical Society, 247
Mydriatics, function of, in correcting errors of refraction, 387
Myomotomy during pregnancy, 494
Myxedema of syphilitic origin, a case of, 354

NAPHTHALIN, the vapor of, in the treatment of whooping-cough, 76
Naso-pharyngeal stenosis, 344
National conference of charities and correction, 469
health-service, importance and necessity of, 328
system of sanatoria; a plea and a prophecy, 623
Necessity of State medical examinations, 191
Needle in the trachea, 216
Nephrectomy, para-peritoneal, for tuberculosis of the kidney, 436
transperitoneal, 493
Nephritis, chronic, associated with aneurism of the ascending aorta, 159
what relation has it to pulmonary tuberculosis? 421
Nerves, the suture of, 188
Nervous symptoms, forms of disease characterized by the presence of, 281
system, sclerosis of the, 554
Neurasthenia, injections of gray cerebral matter in the treatment of, 354
Neuritis, double optic, following influenza, 271
Neuroma, with report of a case, 59
Neuroses, the dietetic treatment of some important, 5
Neurosis, an unusual, 48
Neurotic edema following traumatism, three cases of, 432
New York, in, 248
typhus fever in, 248
Newborn, mammary activity and menstruation in the, 41
Night-sweats of pulmonary tuberculosis, camphoric acid for, 293
Non-contagiousness of leprosy, 353
-traumatic hemorrhage into the spinal cord, 184
-venereal syphilis, 263
Norbury, Frank P., M.D., a case of abscess of the temporo-sphenoidal lobe, and of the middle lobe of the cerebellum, 549
Nostrums, "Medical Mirror" and, 633

OBITUARY—
D. Hayes Agnew, M.D., 368
Henry I. Bowditch, M.D., 108
Wm. H. Bunce, M.D., 363
Sir Morell Mackenzie, 192
Obsolescence of medical terms, 51
Obstetrics and gynecology, some mooted points in, 664
Obstruction of the bowel by a gall-stone, 381
of the common bile-duct, two fatal cases of, 464
Occlusion of both common iliac arteries; gangrene; death, 96
Ocular injury in forceps-delivery, 440
Odontalgia due to acute pulpitis, for, 324
Ohio, medical nihilism in, 413
Old age, the temperature in, 301
Oleomargarin, 113
Ophthalmia, purulent, a method of infection, treatment and prophylaxis of, 657
Ophthalmic practice, pyoktanin in, 216
Ophthalmoblennorrhea neonatorum, the prophylaxis of, 324
Ophthalmometer, Javal's, a critical study of the main defects of, 626
reliance upon, 472
Opium, recovery from three ounces of tincture of, 520
the alkaloids of, 696
Optical glass, the recent inventions of new, 207
Optic-nerve atrophy, pre-ataxic tabes dorsalis with, 337
Orchitis following influenza, 410
Osler, William, M.D, remarks on specialism, 542
Osteo-medullary lesions of mammary carcinoma, 520
Ostitis, chronic, and abscess of the tibia of long standing, 269
Otorrhea, for, 382
Outfit, physician's, 388
Out-patient reform, 219
Ovarian gestation, 719
hernia, acquired crural, 297
irritation and dysmenorrhea, black snakeroot for, 552
Ovaries, removal of tumors of both, 131
Oxytocic, mistletoe as an, 547

PACHYDERMIC cachexia, cretinoid idiocy with, 244
Pads of absorbent gauze as a substitute for flat sponges in abdominal surgery, 214
Pagenstecher's operation for entropion and distichiasis, illustrated by two cases, 185
Pain, cardiac, the different forms of 690
Palate-retractors, self-retaining, 81
Palpitation of the heart, 22
Palsy, acute bulbar, of inflammatory origin, 579
Pan-American Medical Congress, 162
State aid for, 583
Papilliferous fibro-cystic adenoma of aberrant breast-nodule, 269
Paralysis agitans and combined posterior spinal sclerosis, 437
in a young man, 718
the pathology of, 188
following measles, a case of, 183
of the radial nerve, mechanical aid in cases of, 324
Paretic dementia, gold and sodium chloride in the treatment of, 580
the etiology of, 324
Park, Roswell, M.D., elephantiasis arabum of the leg; ligature of the femoral artery, 180
non-fatal laceration of the spinal cord; intra-dural hemorrhage, with undiscovered compression, 544
Parkhill, Clayton, M.D., linear craniotomy, 236
Parvin, Theophilus, M.D., Prof. Winckel's anterior colorrhaphy, 322
Patella, longitudinal fracture of, 215
Pathologist, the, 385
Pathology, school of, for Philadelphia, 469
Payne, R. L., M.D., viburnum prunifolium; its physiologic action and therapeutic application, 371
Pediculi pubis, treatment of, 382
Pegs, ivory, 140
Pelvic disorders, mechanical influences in, 62
Pennington, E. V., M.D., volvulus from violent exercise; laparotomy; death, 103
Penology, progress in, 105
Perforating wound of the right lung: recovery, 155
Perforation of the appendix vermiformis, a peculiar case of probable, 120
Perforative aortitis, 216
Pericardium, tuberculosis of, 271
Perineal section without a guide, report of eight additional cases of, 200
Perineum and bladder, carcinoma of, 487
Perineum, operation through, for imperforate anus, 267
Peritoneum, cyst of the, resulting from impacted gall-stones; autopsy, 298
Peritonitis, puerperal, removal of the uterus in, 271
tuberculous, from a surgical standpoint, 316
Pernicious anemia, atrophy of the gastric mucous membrane and degeneration of the spinal cord, 381
Pershing, Howell T., M.D., pre-ataxic tabes dorsalis, with optic-nerve atrophy, 337
Petroleum-emulsion for skin-diseases, 526
Pharmacy and medicine, the perplexities of honest men in the professions of, in regard to "blind preparations," 470
Pharyngo-mycosis, 38
Pharynx, obstruction of, tracheotomy for, with removal of mucous polypus from the nose, 72
primary lupus of, a case of, 36
vault of, removal of adenoid growths from, 379
Phenacetin in the treatment of influenza, 53
Phillips, Wendell C., M.D., a case of so-called laryngeal vertigo or laryngeal epilepsy, 319
Phimosis complicating simple venereal ulcer, 487
Phlebitis and thrombosis following elephantiasis of the leg, 180
of the internal jugular vein and the lateral sinus, successful treatment of, 244
Phosphorus, antidote to, permanganate of potassium as an, 244
Phrenic nerve, compression of, in the treatment of hiccough, 302
Phthisis and tuberculosis pulmonum, 20
polyuria in, controlled by full doses of ergot, 19
Physician's outfit, 388
Physiologic action of viburnum prunifolium, 372
Pigmentation of the skin from the use of arsenic, 466
Pilocarpine, employment of, for the relief of deafness, 467
nitrate in facial erysipelas, 551
Pirtle, G. W., M.D., a case of acrania, 298
Pittsburg Medical Review and the Association Journal, 720
Plagiarism extraordinary, 266
Plea for home-industry from a medical point of view, 306
Pneumonectomy and pneumonotomy, 271
Pneumonia, post-paludal, 160
the treatment of, 195, 473
Pneumonotomy and pneumonectomy, 271
Poisoning by balsam of Peru, 353
by chloroform, a case of, 75
coal-gas, six cases of, one of them with autopsy, 68
fatal, by magnesium sulphate, 159
from homatropine used in the examination of refraction, 102
Poisons, bacterial, the relations of various, to immunity and cure, 551
Poliomyelitis, 211

Polypus of the cervix uteri, a unique case of, 239
Polyuria in phthisis controlled by full doses of ergot, 19
Pork, American, in Germany, 77
Post, Sarah E., M.D., can we drain the Fallopian tubes? 29
Posterior spinal sclerosis, etiology of, 76
treatment of, by extension, 438
Post-paludal pneumonia, 160
Potassium cantharidinate in the treatment of pulmonary tuberculosis, 159
permanganate as an antidote to phosphorus, 244
Pott's disease, bilateral lumbar abscess associated with, 65
Practical methods of sanitary inspection, 278
results of charity-abuse, 21
test for air-impurity, 373
Practice, private, should tuberculin be administered in? 340
Practitioner, elder, duties of, 189
general, will the, cease to exist, 578
young, the duties of, 160
Pre-ataxic tabes dorsalis, with optic-nerve atrophy, 337
Pregnancy and parturition, ingravescent cerebral thrombosis and hemorrhage during, 104
bilateral tubal, 104
chorea in, 41
myomotomy during, 494
tubal, bilateral, 104
Pregnant women, abdominal and uterine tolerance in, 468
Present and prospective therapeutics, 570
Preston, G. J., M.D., hemorrhage into the cord, with report of a probable case, 318
Primary lupus of the pharynx, a case of, 36
Primipara, a case of retroversion of the the gravid uterus in a, 492
Professional ideals, a political parallel, 467
Program, a noble, 77
Progress in penology, 107
in the University of Buffalo, 276
Prophylaxis of opthalmo-blennorrhea neonatorum, 324
Proprietary preparations, the ethics of, 355
the prescription of, 499
Prostatitis, chronic, suppositories for, 272
Protest at once, 305
Pruritus, for, 632
ani, for, 410
Pseudo-leukemia and glandular tuberculosis, differentiation of, 437
-tabes, forms of, due to lead, alcohol, diphtheria, 368
-tuberculosis, 132
Psoriasis, 265
of the scalp, remedy for, 302
Psychologic aspect of the "Keeley cure," 80
Psychoses and influenza, 76
Ptomaïnes, urinary, of exophthalmic goiter, 300
Public test-offices, 275
Puerperal eclampsia, 159
peculiar case of, 73
toxicity of the blood in, 354
insanity, 41
peritonitis, removal of the uterus in, 271
pyemia, erysipelas appearing in, 241
septicemia, 46
Pulmonary tuberculosis, inunctions of iodoform in, 410
the cure of, 272
Pulpitis acute, odontalgia due to, 324
Pulse, slow, in connection with fatty heart, 465
Puncture for the relief of anasarca, 410
Purpura of the mucous membrane of the mouth, pharynx and larynx, 188
Purulent ophthalmia, a method of infection, treatment and prophylaxis of, 657
Pyemia, puerperal, erysipelas appearing in the course of, 241
Pyema, report of a case of, following acute edema of the larynx, 141
Pylorus, carcinoma of, resection of the stomach for, 243
Pyoktanin in ophthalmic practice, 216

QUACK, the irrepressible, 333
Quackery, the etiology, diagnosis, and treatment of the prevalent epidemic of, 510
Quacks, consultation with sectarians and, 439
Quarantine service, amplification of the, 553
Quinine, non-bitter, 632

RACE, medical solidarity of, 247
Rachford, B. K., M.D., hemophilia, 227
the mechanism of immunity, with its clinical lessons, 453
Radcliffe, S. J., M.D., what relationship has chronic nephritis to pulmonary tuberculosis? 421
Radial nerve, mechanical aid in cases of paralysis of, 324
Radical treatment of hernia, 437
Radius and ulna, case of complete outward dislocation of the, at the elbow, reduced after division of tendon of the triceps, 549
fracture of the neck of, and backward dislocation of the ulna, 18
Railway accidents, 109
Rational signs of disease, 23
Rawlings, H. S., M.D., a case of retroversion of the gravid uterus in a primipara, 492
Reaction obtained from an aqueous extract obtained from bacteria, 104
Reading, George Evans, M.D., perforating wound of the right lung; recovery, 155
Reading-notice, the immorality of the, 327
Recent progress in the study of the blood, 303
Recitations *v.* lectures in medical colleges, 575
Rectal disease, systematic examination for, 197
Recto-vulvar fistula, 41
Reform, out-patient, 219
Reflexes from the eye, severe "common cold" due to, 300
Refraction, poisoning from homatropine used in the examination of, 102
the function of mydriatics in correcting the errors of, 387
Reliance upon the ophthalmometer, 472
Regulation of dispensary practice, 497
Remarks on specialism, 542
Remedy for tuberculosis, tuberculocidin, 441
Removal of adenoid growths from the vault of the pharynx, 379
of the faucial tonsils by the galvano-cautery snare, 319
Renal artery, aneurism of, 122
calculus passed by the bowel, 242
Request for embryologic material, 418
Research, modern gastric, misnomers and misconceptions revealed by, 589
Resection of the stomach for carcinoma of the pylorus, 243
Responsibility and insanity, 21
Retroversion of the gravid uterus in primipara, 492
Reviews—
Abbott, A. C., M.D., The Principles of Bacteriology; a Practical Manual for Students and Physicians, 250
Agnew, W. P., M.D., Diagnosis and Treatment of Hemorrhoids and other Non-malignant rectal diseases, 221
Althaus, Julius, M.D., M.R.C.P., The Pathology and Prevention of Influenza, 445
Aulde, John, M.D., A Pocket Pharmacy, with Therapeutic Index, 446
Reviews—
Baelz, E., M.D., Diseases of the Respiratory Organs, 501
Bakody, Prof. Theodor, M.D., Scientific Medicine and Homeopathy, 24
Ballance, Charles A., M.D., and Walter Edmunds, M.D., A Treatise on the Ligation of the Great Arteries in Continuity, with Observations on the Nature, Progress, and Treatment of Aneurism, 474
Barr, James, M.D., The Treatment of Typhoid Fever, and Reports of Fifty-five Consecutive Cases, with only one Death, 335
Brockaway, Fred. J., M.D., Essentials of Medical Physics, 446
Carpenter, William B., C.P., M.D., LL.D., F.R.S., The Microscope and its Revelations, by the Rev. Wm. H. Dallinger, LL.D., F.R.S., etc., 251
Chauveau, A., The Comparative Anatomy of the Domesticated Animals. Translated by George Flemming, F.R.C.V.S., 444
Coltman, Robt., Jr., M.D., The Chinese; Their Present and Future, Medical, Political, and Social, 444
Culver, Everett, M., A.M., M.D., and Hayden, James R., M.D., A Manual of Venereal Diseases, 55
Da Costa, J. M., M.D., LL.D., Medical Diagnosis, with Special Reference to Practical Medicine, 336
Davis, N. S. R., A.M., M.D., Consumption; how to Prevent it, and how to Live with it, 445
Fifth Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania, 24
Foster, M., M.A., M.D., LL.D., F.R.S., A Text-book of Physiology, 24
Fox, Wilson, M.D., F.R.S. (the late), A Treatise on the Diseases of the Lungs and Pleura. Edited by Sidney Coupland, M.D., F.R.C.P., 523
Fullerton, Anna M., M.D., Nursing in Abdominal Surgery and Diseases of Women, 446
Gibson, G. A., M.D., and Russell, William, M.D., A Guide to Physical Diagnosis, 220
Gowers, W. R., M.D., F.R.C.P., F.R.S., A Manual of Diseases of the Nervous System, 523
Hall, H. N., Ph.G., M.D., A Manual of General Pathology and Morbid Anatomy, 222
Hare, Hobart Amory, M.D., A System of Practical Therapeutics, 194, 418
Hirst, Barton Cooke, M.D., and Piersol, Geo. A., M.D., Human Monstrosities, 502
Holland, J. W., M.D., The Urine, the Common Poisons, and the Milk, 27
Huldekoper, Rush Shippen, M.D., Age of the Domestic Animals, 222
Hurd, E. P., M.D., Sleep, Insomnia, and Hypnotics, 475
Jamieson, W. Allen, M.D., Diseases of the Skin, 334
Jewett, Charles, A.M., M.D., Childbed Nursing, 27
Johnstone, Alex., F.G.S., Botany, 475
Landois, L., M.D., and Stirling, William, M.D., Sc.D., A Text-book of Human Physiology, 194
Long, Eli H., M.D., Tables for Doctor and Druggist, 221
Lovett, Robert W., M.D., the Etiology, Pathology, and Treatment of Diseases of the Hip-joint, 443
Mays, Thomas J., M.D., Pulmonary Consumption: A Nervous Disease, considered as such from a Clinical and a Therapeutic Standpoint, 55

Reviews—
McBride, P., M.D., F.R.C.P. Edin., Diseases of the Throat, Nose, and Ear, 442
McClellan, George, M.D., Regional Anatomy in its relation to Medicine and Surgery, 54
Medical News Visiting List for 1892, 28
Merz, Charles H., A.M., M.D., Influenza, 502
Moore, Avard J., That Uncomfortable Shoe, 27
Muter, John, M.A., Ph.D., F.R.S.E., A Short Manual of Analytical Chemistry, 25
Nissen, Hartvig. A B C of the Swedish System of Educational Gymnastics, 445
Norris, Richard C., A.M., M.D., Syllabus of the Obstetric Lectures in the Medical Department of the University of Pennsylvania, 26
Osler, Wm., M.D., The Practice and Principles of Medicine, 442
Ostrom, Kurre W., Massage and the Original Swedish Movements, 501
Paquin, Paul, M.D., The Supreme Passions of Man, 222
Park, Roswell, M.D., The Mütter Lectures on Surgical Pathology, 500
Parker, W. Thornton, M.D., Records of the Association of Acting Assistant Surgeons of the United States Army, 28
Philip, R.W., M.D., Pulmonary Tuberculosis, Etiological and Therapeutic, 220
Physicians' Visiting List for 1897, 27
Politzer, Adam, M.D., The Anatomical and Histological Dissection of the Human Ear in the Normal and Diseased Conditions, 335
Potter, George W., M.D., Ministering Women, 27
Powell, William M., Saunders' Pocket Medical Formulary, 251
Prescriber's Pharmacopeia, 220
Remondino, P. C., M.D., The Mediterranean Shores of America, 502
Robinson, Fred. B., B.S., M.D., Practical Intestinal Surgery, 25
Rohé, George H., M.D., and Lord, William S., A.B., M.D., A Practical Manual of Diseases of the Skin, 443
Schweinitz, G. E. de, M.D., Diseases of the Eye, 524
Sexton, Samuel, M.D., and Duane, Alexander, M.D., The Rational Cure of Deafness and Discharge from the Ear, 222
Shakespeare, Edward O., A.M., M.D., Ph.D., Report on Cholera in Europe and India, 191
Shaw, John C., M.D, Essentials of Nervous Diseases and Insanity, 111
Sheild, A. Marmaduke, M.D., F.R.C.S. Surgical Anatomy for Students, 475
Sihler, Chr., M.D., Ph.D., The Hydriatric Treatment of Typhoid Fever, 444
Simon, W., Ph.D., M.D., Manual of Chemistry, 222
Stewart, D. D., M.D., and Lawrence, E. S., M.D., Essentials of Medical Electricity, 447
Stillman, Charles, M.D., A Practical Resumé of the Modern Methods Employed in the Treatment of Chronic Articular Ostitis of the Hip, 252
Sutton, J. Bland, F.R.C.S., Surgical Diseases of the Ovaries and Tubes, including Tubal Pregnancy, 446
Taylor, J. J., M.D., The Physician as a Business Man, 222
Three Thousand Questions on Medical Subjects, 27
Transactions of the Association of American Physicians, 221
Transactions of the Medical Society of the State of New York, 26
Tyson, James, M.D., Manual of Physical Diagnosis, for the Use of Students and Physicians, 221
Van Riper, L. D, Record-book for Physicians and Trained Nurses, 223
Vaughan, Victor C., M.D., and Novy, Frederick G., M.D., Ptomaïnes, Leucomaïnes, and Bacterial Proteids, 111
Whitla, William, M.D., A Dictionary of Treatment, or Therapeutic Index, 443
Wood, Casey A., M.D., Lessons in the Diagnosis and Treatment of Eye Diseases, 447
Wyman, Hal C., M.Sc., M.D., Diseases of the Bladder and Prostate, 500
Yeo, J. Burney, M.D., F.R.C.P., Food in Health and Disease, 445
Reyburn, Robert, A.M., M.D., diphtheria treated by the early local application of germicides, 256
Rhein, John H., M.D., the ameba coli, 40
Rheumatism, acute, the blood in, 437
chronic, remedy for, 302
the causation of, is uric acid a prime or sole factor in? 195
uric acid and, 330, 417
Rickets, unique case of, with synchronous heart-contractions and inspiratory acts, each 54 per minute, 213
Riley, Henry A., Esq., legislation in Pennsylvania on medical and health matters during the session of 1891, 210
Robbins, Henry A., M.D., Non-venereal syphilis, 263
Roberts, John B., M.D, the need of common sense in medical practice, 517
Robinson, Fred. Byron, M.D., gonorrhea of the vesiculæ seminales (spermato-cystitis), 508
Rockwell, A. D., M.D., electro-therapeutics in America, 92
Rogers, Edmund J., M.D., neuroma, with report of a case, 59
Rosenheimer, M., M.D., a peculiar case of probable perforation of the appendix vermiformis, 130
Rotch, T.M., M.D., the value of milk-laboratories for the advancement of our knowledge of artificial feeding, 631
Rötheln or scarlatina, 279
scarlatina, and measles, the differential diagnosis between, 471
Ruck, Carl von, M.D., should tuberculin be administered in private practice? 340
Ruff, D. E, M.D., case of intussusception in an infant, 299
Rupture of an aortic valve from physical exertion, 187
of the intestine, two cases of, successfully treated by laparotomy, 20
Rush, Dr. Benjamin, four letters of, 498

SALIVA in disease, 718
of domestic animals, bacillus resembling that of influenza found in, 658
Salol, bismuth subiodide and, intestinal antisepsis in typhoid fever by means of, 75
Sanatoria, a national system of; a plea and prophecy, 623
Sanitary inspection, practical methods of, 278
Sarcoma, multiple, 102
Scalp, psoriasis of, 302
Scarlatina, rötheln, and measles, the differential diagnosis between, 471
sine exanthemate, 186
Scarlatiniform erythema, 600
exanthem, 83
Schaeffer, W. L., M.D., a case of acute internal strangulation of the bowel in a child two years of age; laparotomy; death, 47
Schiller, Leopold, M.D., fracture of the base of the skull, 257
School of pathology for Philadelphia, 469
Schweinitz, G. E. de, M.D., a note on asthenopia and intra-nasal disease, 378
Sclerosis of the nervous system, 554
posterior spinal, atrophy of the maxillary bones in, 301
the etiology of, 75
treatment of, by extension, 438
a case of combined paralysis agitans and, 437
Sectarians and quacks, consultation with, 439
Semicircular canals, the function of, 101
Seminal fluid, transmission of tuberculosis by, 354
Septicemia, puerperal, a case of, 46
Serratus magnus, the action of, in fractured clavicle, 500
Sewall, Henry, M.D., infectious disease in cities, with especial reference to Denver, 617
Sharples, Casper W., M.D., endocarditis of the auricle and rupture of the chordæ tendineæ of the mitral valve, 295
Shoemaker, John V., M.D., vaccination, 537
Shoulder-joint amputations, three, 409
Siegfried, C. A., M.D., the recent inventions of new optical glass, 207
Signs of disease, rational, 23
Skull, fracture of the base of, 257
mental improvement following operations on the, 449
Skin-diseases, petroleum-emulsion for, 526
Smith, W. A. DeWolf, antipyrin in whooping-cough, 48
eclampsia, 505
Snake-bites, treatment for, 104
Sneak advertisements, 496
Society proceedings—
American Academy of Medicine, 663
American Medical Association, 667, 688, 720
American Pediatric Society, 527
American Surgical Association, 637, 659
Association of American Physicians, 608
Buffalo Clinical Society, 362
Medical Society of the State of Pennsylvania, 604
Philadelphia County Medical Society, 556
Sodium, chloride of gold and, in the treatment of paretic dementia, 580
ethylate in dermatologic practice, 410
Solanine in affections of the stomach, 494
Sore-throat, gargle for, 244
Spear, E. D., M.D., the functions of the semicircular canals, 101
Specialism, remarks on, 542
Specialists, will the general practitioner cease to exist and his place be taken by? 578
Speculum, a new nasal, 157
Spencer, H. N., M.D., a new nasal speculum, 157
Spermato-cystitis (gonorrhea of the vesiculæ seminales), 508
Spinal cord, degeneration of, following pernicious anemia and atrophy of gastric mucous membrane, 381
gunshot injuries to the, 353
non-fatal laceration of the, 544
non-traumatic hemorrhage in, 183
sclerosis, atrophy of the maxillary bones in, 301
posterior, case of combined paralysis agitans and, 437
the etiology of, 75
treatment of by extension, 438
Spine, injury to; invention and application of paper jacket, 57

Spleen, the part played by the, in artificial immunity from tetanus, 437
Sponges, flat, in abdominal surgery, pads of absorbent gauze as a substitute for, 215
Sputum, pure culture of tubercle-bacilli from, 658
-examinations, the technique and value of, 533
State aid for the Pan-American Medical Congress, 581
Board of Health and the laboratory of hygiene of the University of Pennsylvania, 276
medical examinations, necessity of, 191
Stenosis, naso-pharyngeal, 344
Sternberg, George M., M.D., micrococcus pneumoniæ crouposæ, 153
Stevens, Edward S., M.D., a new dressing for fractured clavicle. 407
Still-born children, visceral hemorrhages in, 160
Stockton, Charles G., M.D., misconceptions and misnomers revealed by modern gastric research, 589
Stomach, carcinoma of, 187
resection of, for carcinoma of the pylorus, 243
solanine in affections of, 494
Stricture of the esophagus, gastrostomy in, 132
Strontium, salts of, 384
Subdural cyst, double hemorrhagic, 323
Sulphonal, toxic symptoms from, 438
Super-venosity, relation of the knee-jerks to, 381
Suppositories for chronic prostatitis, 272
glycerin, distant action of, 223
Suppuration, therapeutic value, 600
Suppurative phlebitis of the internal jugular vein and the lateral sinus, successful treatment of, 244
Supra-pubic cystotomy followed by urinary fistula, 487
-renal capsules, the toxicity of the blood in mammifera after removal of the, 437
Surgery, abdominal, pads of absorbent gauze as a substitute for flat sponges in, 214
of the gall-bladder and ducts, 631
Surgical diseases of the urinary organs, 567
instructions for the encouragement of vice and depravity, 383
Suture, a new, 103, 223
Swope, S. D., M.D., anomalous congenital function; associated synchronous movements of the upper extremities, 74
multiple sarcoma, 102
Sycosis, 265
Syphilis, hereditary, 717
inherited, a case of sudden deafness from, 489
late, 85
non-venereal, 263
the causes of failure to abort, by excision of initial lesion, 157
Syphilitic infection, extra-genital, 579

TABES dorsalis, pre-ataxic, with optic-nerve atrophy, 337
pseudo, forms of, due to lead, alcohol, diphtheria, 368
Tapeworm, for, 552
remedy for, 244
Taylor, T. E., M.D., causes of the diminished prevalence of typhoid fever in Denver, 260
Tea, coffee-leaf, 470
Technique and value of sputum examinations, 533
Temperature in influenza, 522
in old age, 301
Temporal lobe, successful trephining for abscess of, 132
Tendon-lengthening by splitting, 53
Tendon of the triceps, division of, for complete outward dislocation of the radius and ulna at the elbow, 549
Test, practical, for air-impurity, 373
-offices, public, 275
Testicle, gangrene of, 490
Testimony, expert, 273
Tetanus, the part played by the spleen in artificial immunity to, 437
Tetany of gastric origin, 381
Thalamus, left optic, tumor of, 129
Therapeutic applications of hydrogen dioxide, 158
of virburnum prunifolium, 371
employment of antitoxines, 325
frauds; how the medical profession is deceived thereby, 386
value of suppuration, 600
Therapeutics, present and prospective, 570
Thompson, Hannah M., M.D., a unique case of polypus of the cervix uteri, 239
Thomsen's disease, two cases of, 410
Thoracocentesis, 552
Three shoulder-joint amputations, 409
Thrombosis, cerebral, with report of two cases, 176
Thymacetin, 438
Thymus gland, tumor of, in connection with hemorrhagic purpura, 160
Thyroidectomy in exphotbalmic goiter, 132
Tibia, abscess of, with chronic ostitis, 269
Tincture of opium, recovery from three ounces of, 520
Tinea favosa, 265
Tocci brothers, of Locana, Italy, the blended, 629
Tolerance, abdominal and uterine, in pregnant women, 468
Tonsillitis, case of, tracheotomy, 550
Tonsils, faucial, removed by the galvano-cautery snare, 321
Toxic effects of impure chloroform, 301
symptoms from sulphonal, 438
Toxicity of the blood in mammifera after removal of supra-renal capsules, 437
of the serum of the blood in puerperal eclampsia, 354
of the urine in diseases of the liver, 187
Trachea, a needle in the, 216
Tracheotomy for obstruction of the pharynx, with removal of mucous polypus from the nose, 72
in a case of tonsillitis, 590
Trade-mark, the value of, 586
Transmissibility of carcinoma, 354
Transmission of tuberculosis by the seminal fluid, 354
Transperitoneal nephrectomy, 493
Traumatic rupture of the intestine successfully treated by laparotomy, 20
Traumatism, extensive trephining for the relief of epilepsy from, 548
three cases of neurotic edema following, 432
Trephining, extensive, for the relief of epilepsy from traumatism, 548
successful, for abscess of the temporal lobe, 132
for basal hemorrhage, 132
Triceps, division of tendon of the, for reduction of complete outward dislocation of the radius and ulna at the elbow, 549
Tubercle-bacilli, pure culture of, from sputum. 658
attenuation of, 353
Tuberculin, an immunity-conferring principle in the blood of animals treated with, 301
and tuberculocidin, combined employment of, 464
as a diagnostic agent in cases of tuberculosis in cattle, 358
in the diagnosis of tuberculosis in cattle, the value of, 415
in the treatment of leprosy, 244
Tuberculin, should it be administered in private practice? 340
the blood during treatment with, 580
the utility of, in experimental tuberculosis of the eye in rabbits, 20
Tuberculocidin, a remedy for tuberculosis, 441
and tuberculin, conjoined employment of, 494
Tuberculosis, pulmonary, camphoric acid for the night-sweats of, 293
congenital, 76
glandular, differentiation of pseudo-leukemia and, 437
in cattle, the value of tuberculin in the diagnosis of, 415
tuberculin as a diagnostic agent in, 358
in the city of Philadelphia, the influence of the doctrine of contagion upon the death-rate from, 539
in the goat, 188
of pericardium, 271
of the kidney, para-peritoneal nephrectomy for, 436
of the larynx, insufflation for, 580
pseudo, 132
pulmonary, potassium cantharidinate in the treatment of, 159
the curability of, 190
the cure of, 272
what relationship has chronic nephritis to, 421
pulmonum, phthisis and, 20
the curability of, 190
the use of gold and manganese in, 128
transmission of, by the seminal fluid, 354
treatment of, by iodoform-inunctions, 288
tuberculocidin, a remedy for, 441
Tuberculous arthritis, secondary miliary, 186
cattle, the disposal of, 357
fistulæ, lactic acid for, 552
kidney, extirpation of a, 76
leptomeningitis, sudden death from, 551
peritonitis from a surgical standpoint, 316
Tubes, Fallopian, can we drain the? 29
Tumenol in dermatologic practice, 438
Tumor, fibroid, of the uterus, 268
in the region of the right crus cerebri, 48
of the mid-brain and left optic thalamus, a case of, 29
of the thymus gland in connection with hemorrhagic purpura, 160
Tumors fibroid, of the uterus, 645
of both ovaries, removal of, 131
Tympanites and pregnancy, 156
Typhoid-bacilli and the bacilli coli communis, the differentiation of, 552
Typhoid fever and diphtheria, are they filth-diseases? 312
bacillus of, and the bacillus coli communis, distinction between, 216
causes of the diminished prevalence of, in Denver, 260
chlorine in, 132
Ehrlich's test of the urine in, 365
facial erysipelas complicating, 205
hemorrhage in, 139
intestinal antisepsis in, by means of bismuth subiodide and salol, 75
the dangers of antipyretics in, 457
the treatment of hemorrhage in, 53
treatment of, by cold baths, 594
Typhus fever in New York, 248

ULCER of the arm, 482
phimosis complicating simple venereal, 487
Ulcers of the leg, moist and painful, 302
Ulna, backward dislocation of, and fracture of the neck of the radius, 18

Umbilical cord, the care of, 41
Ununited fractures, 1
Unusual causes of jaundice, 324
Urates in the urine, forms of disease characterized by the presence of, 281
Urethra, female, malignant disease of, 587
Uric acid and rheumatism, 330, 417
in the urine, forms of disease characterized by the presence of, 281
is it a prime or sole factor in the causation of rheumatism? 111, 185
Urinary fistula following supra-pubic cystotomy, 187
organs, surgical diseases of, 567
ptomaïnes of exophthalmic goiter, 300
Urine, albumin in, an easy method of estimating the percentage of, 52
Ehrlich's test of, in typhoid fever, 365
forms of diseases characterized by the presence of bile, urates, and uric acid in the, 281
hydrogen disulphide in, a case of, 154
incontinence of, prescription for, 244
specimens of, desired, 54
the percentage of albumin in, 85
toxicity of, in diseases of the liver, 187
the reaction of, with ether, 491
Uteri, cervix, a unique case of polypus of the, 239
Uterine and abdominal tolerance in pregnant women, 468
complications of influenza, 324
dilatation and drainage following endometritis, 404
Uterus, fibroid tumor of the, 268
tumors of the 645
gravid, a case of retroversion of, in a primipara, 492
hysterectomy for carcinoma of, 493
removal of, in puerperal peritonitis, 271
the microscope as an aid to diagnosis in diseases of the, 477

VACCINATION, 537
Value of a trade-mark, 386
Valvular lesions of the heart, the treatment of, 135
Vas deferens, inflammation of, without epididymitis, 48
Venereal ulcer, phimosis complicating simple, 487
Vertigo, laryngeal, or laryngeal epilepsy, a case of so-called, 318
of arterio-sclerosis, 715
the clinical and pathologic significance of, 477
Vesiculæ seminales, gonorrhea of the (spermato-cystitis), 508
Viburnum prunifolium; its physiologic action and therapeutic applications, 371
Vice and depravity, surgical instruction for the encouragement of. 383
Virus of hydrophobia, the influence of the gastric juice upon, 466
Visceral hemorrhages in still-born children, 160
Volvulus from violent exercise; laparotomy; death, 103
Vomiting after operations, 332
relief of, 272

WALLIAN, SAMUEL S., M.D., a national system of sanatoria; a plea and a prophecy, 623
in re hydrogen dioxide, 125
Walton, G. M., M.D., and C. F. Carter, M.D., eye-strain and headache, 309
Wanted, a cure, 108
Washed air for hospitals and assembly rooms, 277
Weiland, Carl, M.D., a critical study of the main defects of Javal's ophthalmometer, 626
Whooping-cough, antipyrin in, 48
the vapor of naphthalin in the treatment of, 76
Wilkins, George, M.D., the treatment of typhoid fever by cold baths, 594
Will the general practitioner cease to exist and his place be taken by specialists? 578
Winckel's anterior colporrhaphy, 322
Woman, at what age may she marry? 134
Wood, Dr., a correction from, 641
Word-blindness, 521
Worthington, R. H., M.D., fistula in ano 573
systematic examination for rectal disease, 197
Wright, Jonathan, M.D., a case of primary lupus of the pharynx, 36
Wyeth's method, amputation at the hip-joint by, 349

XERODERMA pigmentosum, two cases, 435

YOUNG, J. K., a case of bilateral lumbar abscess associated with Pott's disease, 65

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